FOUNDED IN 1856

RAILWAY AGE

SEPTEMBER 18, 1948

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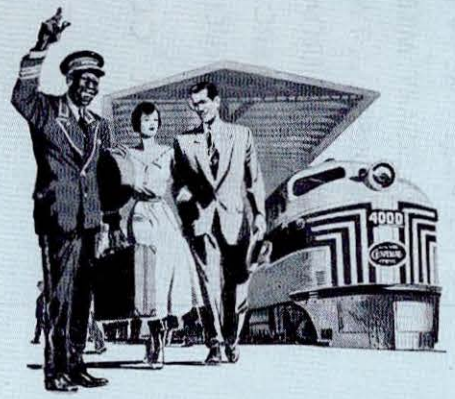
GREETING THE NEW CENTURY



Now there is a new and even finer 20th Century Limited.

It made its first regularly scheduled runs between New York and Chicago on September 17.

Heading this new and finer train were General Motors Diesel locomotives which, during the past two years and five months, have powered the Century over a total of more than 5 million miles.

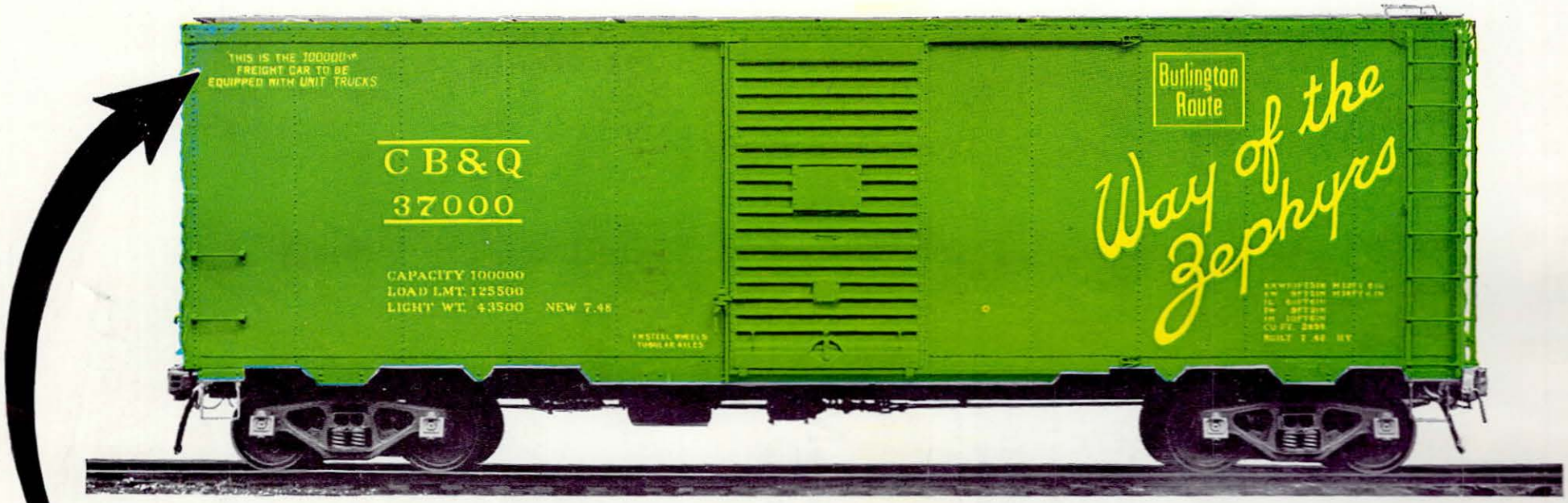
We congratulate the New York Central on this rededication of the Century's always high standards of service.

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS • LA GRANGE, ILL.

Home of the Diesel Locomotive

GENERAL MOTORS LOCOMOTIVES



THIS IS THE 100000TH FREIGHT CAR TO BE EQUIPPED WITH UNIT TRUCKS

TWO MILLION PEOPLE ...WILL SEE THIS CAR

FOR THE FIRST TIME IN THE HISTORY OF AMERICAN RAILROADING THE ANNIVERSARY MILESTONE OF A CAR SPECIALTY HAS BEEN THUS HONORED . . . TWO MILLION PEOPLE WILL SEE THIS CAR AT THE CHICAGO RAILROAD FAIR . . . THANKS TO THE BURLINGTON AND 91 OTHER RAILROADS AND PRIVATE CAR LINES WHO HAVE MADE THIS UNIT TRUCK ACHIEVEMENT POSSIBLE.

UNIT TRUCK CORPORATION . . . NEW YORK

EVERY OTHER FREIGHT CAR SOLD DURING THE FIRST HALF OF '48 IS A UNIT TRUCK CAR

SAFE FOOTING?

YOU BET!

We Use...

4-WAY FLOOR PLATE!

• Men *on the job* like Inland 4-Way Floor Plate. They know it prevents slipping. This modern, skid-resistant flooring provides built-in protection wherever feet or wheels must go . . . floors, steps, ramps. What's more, maintenance is a simple matter. Made of hot-rolled steel, Inland 4-Way Floor Plate won't burn, warp, crack, splinter, or absorb liquids or odors. It's easy to install . . . lasts for years.

Write for Booklet

INLAND STEEL COMPANY

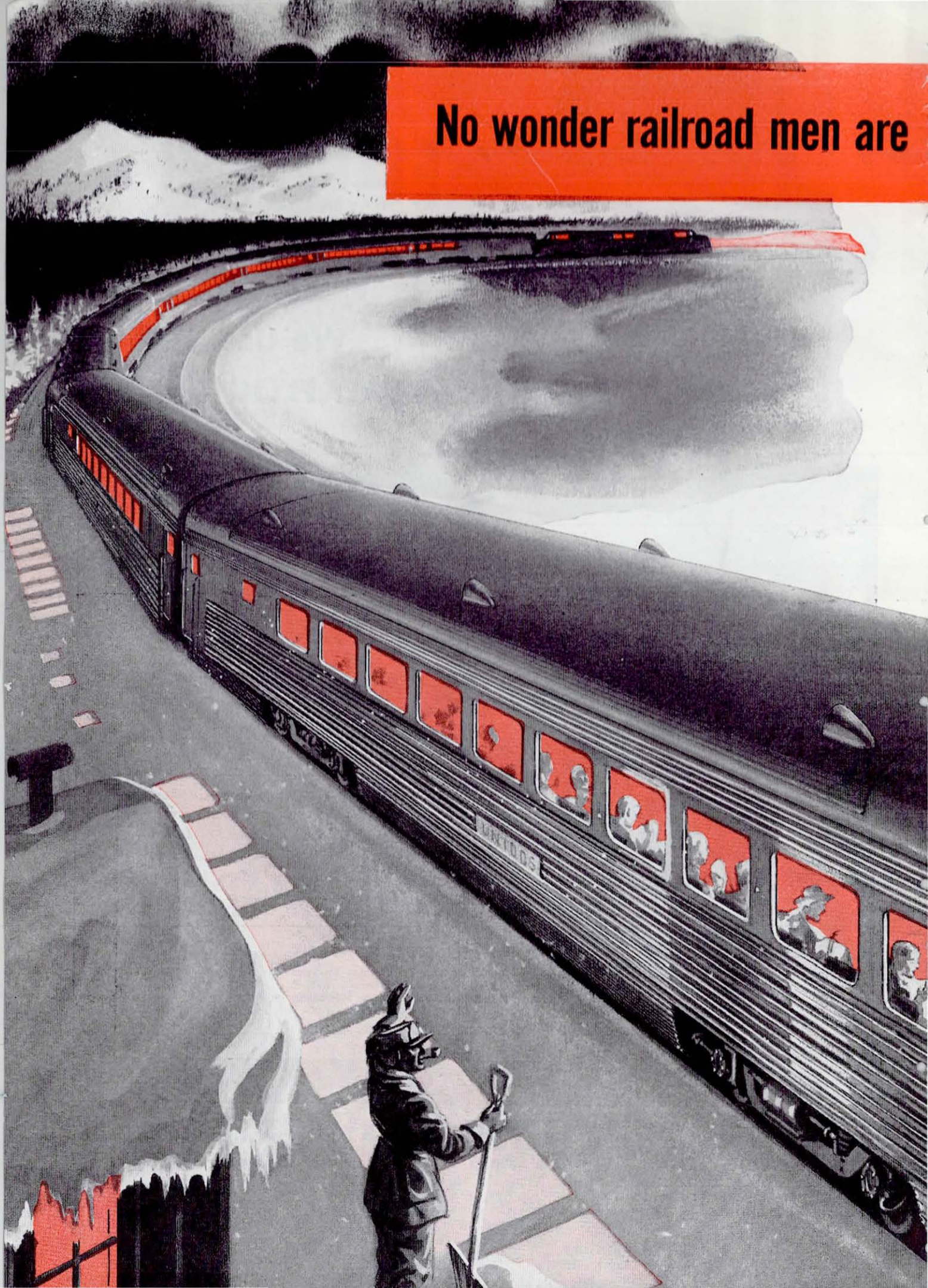
38 S. Dearborn St., Chicago, Ill. Sales Offices: Chicago, Davenport, Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis, St. Paul.

STOCKED BY LEADING WAREHOUSES

INLAND STEEL

INLAND 4-WAY FLOOR PLATE

Published weekly by Simmons-Boardman Publishing Corporation, Orange, Conn. Executive Offices, 30 Church Street, New York 7, N. Y. Entered as second class matter at Orange, Conn., under the act of March 3, 1879. Subscription price $6.00 for one year. U. S. and Canada. Single copies 50 cents each. Vol. 125, No. 12.


No wonder railroad men are

WEATHER VAIN!

INSUTAPE and WOVENSTONE steam pipe insulation make it possible for railroad mechanical and operating personnel to *do* something about the weather—inside cars. No matter how long trains may be, Insutape and Wovenstone protect piping from ice and snow, sleet and slush—protect against heat losses as steam courses through pipes the full length of the train. It's always fair weather when Unarco insulation and piping get together! Weather-proof, ballast-proof and fire-proof, Insutape and Wovenstone have provided trouble-free, day-in, day-out service on thousands of cars and locomotives for years. Both can be applied, removed for pipe inspection and reapplied in a jiffy!

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UNARCO

UNION ASBESTOS & RUBBER CO.
332 S. Michigan Avenue, Chicago 4, Illinois
New York • San Francisco

CONCRETE Barrel Shell Roofs provide large column-free areas

CONCRETE barrel shell roofs are ideal for buildings requiring large interior areas free from obstructions. This type of construction offers these distinct advantages:

1. Long spans—up to 300 feet and more—without supporting columns.
2. Maximum usable floor space.
3. Adaptability to a variety of plan requirements.
4. Unusual economy in large structures.
5. Firesafety, low insurance and long life.

This design was chosen for the New York City Fire Department's new repair shops (shown above) in Long Island City, N.Y. The central interior portion of the building has an unobstructed area, 121 x 490 feet, with 35-ft. clearance from floor to crown of roof. Side walls are 12 ft. high at the springing line.

Along both sides of the structure are two full-length lean-to's, spanned by 39-ft. concrete barrel shell roofs. These lean-to's provide space for woodworking, foundry, upholstery and other shops. At the ends of the building, two-story conventional beam and slab type sections for office and storage space complete the structure that was designed by the Bureau of Architecture, New York City Department of Public Works, and erected by Corbetta Construction Co. Roberts and Schaefer Co., Chicago, were the engineers.

The exterior rib construction makes possible a smooth interior ceiling. At the crown the roof is only 3¾-in. thick.

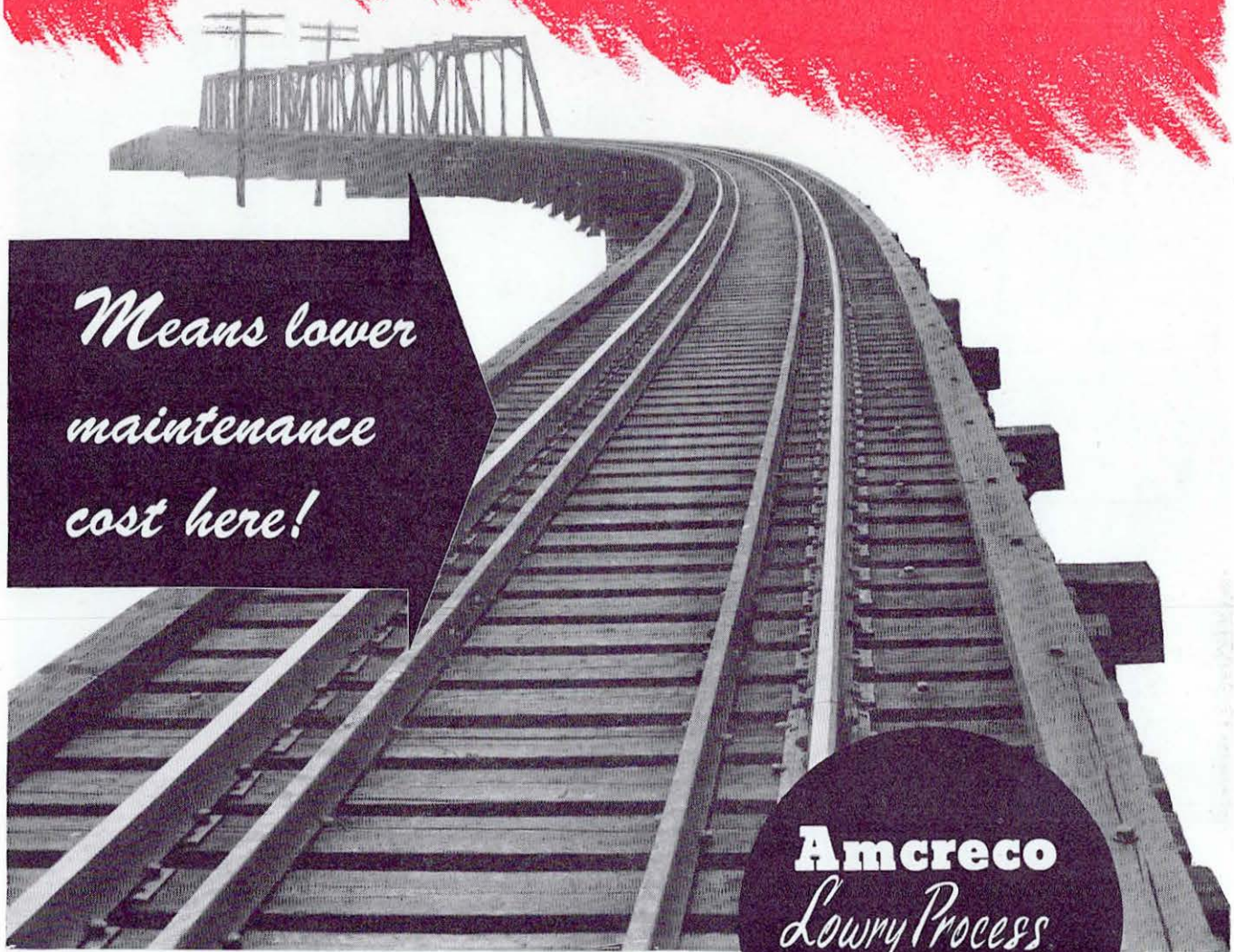
Wherever large, column-free floor areas are essential—such as in train sheds, railroad repair shops, warehouses, auditoriums, airplane hangars, sports arenas and gymnasiums, produce markets, big garages and monumental buildings—concrete barrel shell roofs are the economical answer.

PORTLAND CEMENT ASSOCIATION

DEPT. 9c-26, 33 WEST GRAND AVE., • CHICAGO 10, ILLINOIS

A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work

Continuous research and development at AMCRECO



Means lower maintenance cost here!

Amcreco *Lowry Process* **Creosoted Products**

The ever increasing life expectancy of Amcreco Creosoted Products is no accident. It is the direct result of continuing research and development at Amcreco. With the tried and proven Lowry pressure creosoting process as the foundation, refinements and improvements in treatment techniques have in many instances doubled and even tripled service life in the space of the last 25 years.

Backed by this progressive program, Amcreco Creosoted Products are your best assurance of long life and minimum maintenance. For greater all-around economy on your next job, specify Amcreco.

- Adzed and Bored Cross Ties
- Bridge Ties
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AMCRECO LOWRY PROCESS CREOSOTED WOOD

GEORGIA CREOSOTING COMPANY INCORPORATED

LOUISVILLE, KENTUCKY

Pressure-treated for strength that lasts!

KEEP THAT "NEW LOOK"
with the WHITING WASHER

THAT gleaming new finish is fully protected when your train comes through a Whiting Washer spotlessly clean.

Whiting Washers operate at speeds up to 80 feet per minute. They help meet the problems of labor shortages and heavy demands on equipment. Single - and multiple unit washer installations are available for handling coaches, locomotives, and tenders. Write for information.

WHITING
CORPORATION

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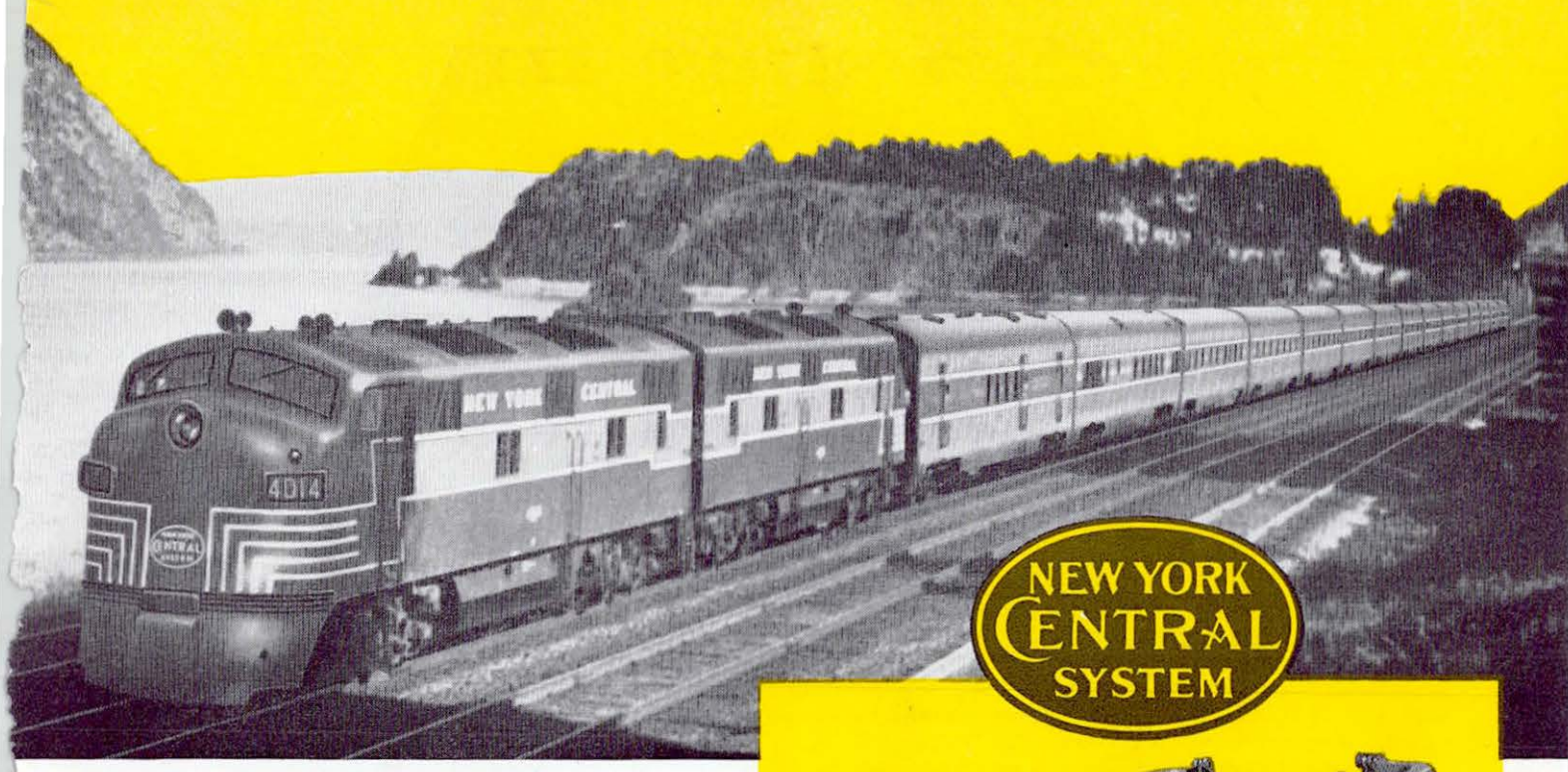
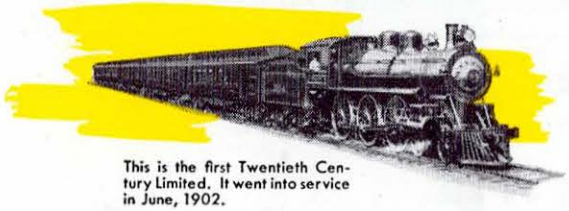
Offices in Chicago, Cincinnati, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, and St. Louis. Agents in other principal cities. Canadian Subsidiary: Whiting Corporation (Canada) Ltd., Toronto, Ontario. Export Department: 30 Church St., New York 7, N. Y.

Photo courtesy Chicago, Rock Island and Pacific

Dawn of a New "Century"



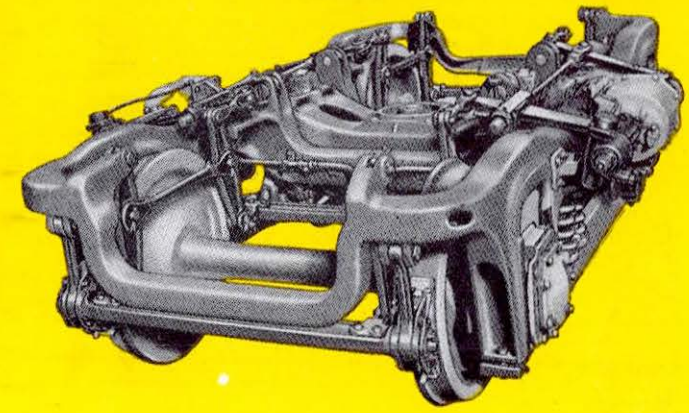
NEW YORK CENTRAL SYSTEM



This is the first Twentieth Century Limited. It went into service in June, 1902.

American Steel Foundries joins with the nation in saluting one of America's *finest trains*—the modern, new "Century." It's swift transportation . . . passenger comfort, safety, and convenience . . . everything that can make this *great name* even greater.

Like all of its predecessors for more than *thirty years,* today's new "Century" is equipped with A.S.F. Simplex Clasp Brakes. There's been progress in sure, smooth braking, too—progress that has put dependable Simplex Unit Cylinder Clasp Brakes on the cars and power units of virtually *all* Streamliners.



Streamlined, Light-Weight

SIMPLEX UNIT CYLINDER CLASP BRAKES

AMERICAN STEEL FOUNDRIES

MINT-MARK OF ○ FINE CAST STEEL

WATCHDOGS OF CHEMISTRY FOR STEEL
WHY NOT EQUAL CERTAINTY FOR WOOD?

THE STEEL which goes into your structures is carefully checked by chemical analysis during and after manufacture. The protective paint or other coating used is subject to the same searching tests. Only by strict laboratory methods can anyone be sure that unexpected variations of formula do not destroy future service value.

When it comes to wood preservatives, the same strict standards should be applied. There is no other way to be certain that costly investment in poles, cross arms and structural timbers is adequately and positively protected. That is why we urge the specification of a preservative substance that can be identified and measured *in the treated wood*, and which has a toxic value of known and unvarying performance.

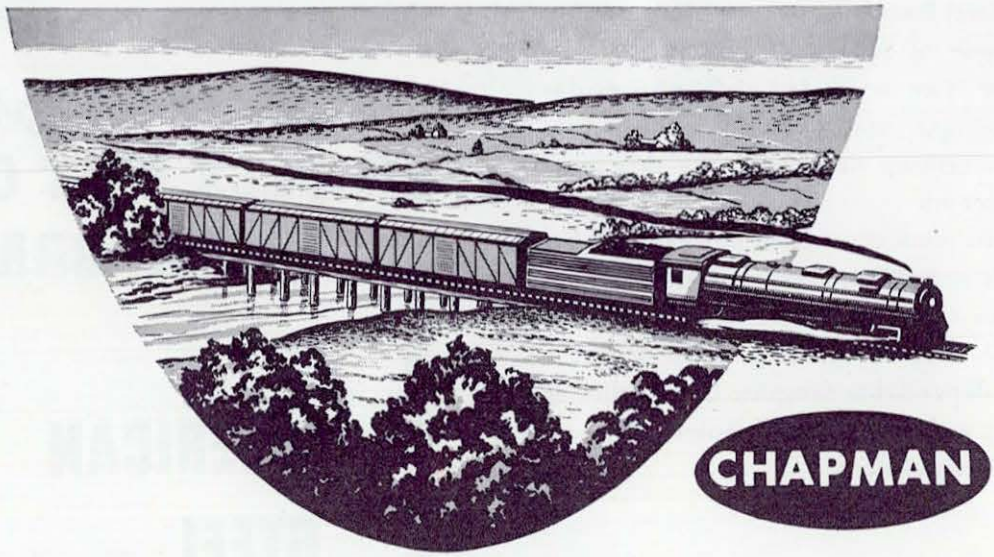
Such is Pentachlorophenol, the active ingredient of Chapman Penta Preservative. Because it is defined *chemically*, it is the same substance today that it was 100 years ago. It must continue to be identical in chemical structure, and hence in preservative power, as long as it is called Pentachlorophenol. Demonstrations of results from a decade ago are valid today because of this continuing identity.

Chapman Penta Preservative does not make the wood unpleasant to touch. Treatment with Penta Preservative uses the same equipment and methods as other commonly used preservatives and costs about the same. Its positive measurable protection—and its cleanliness—are extras that cost nothing.

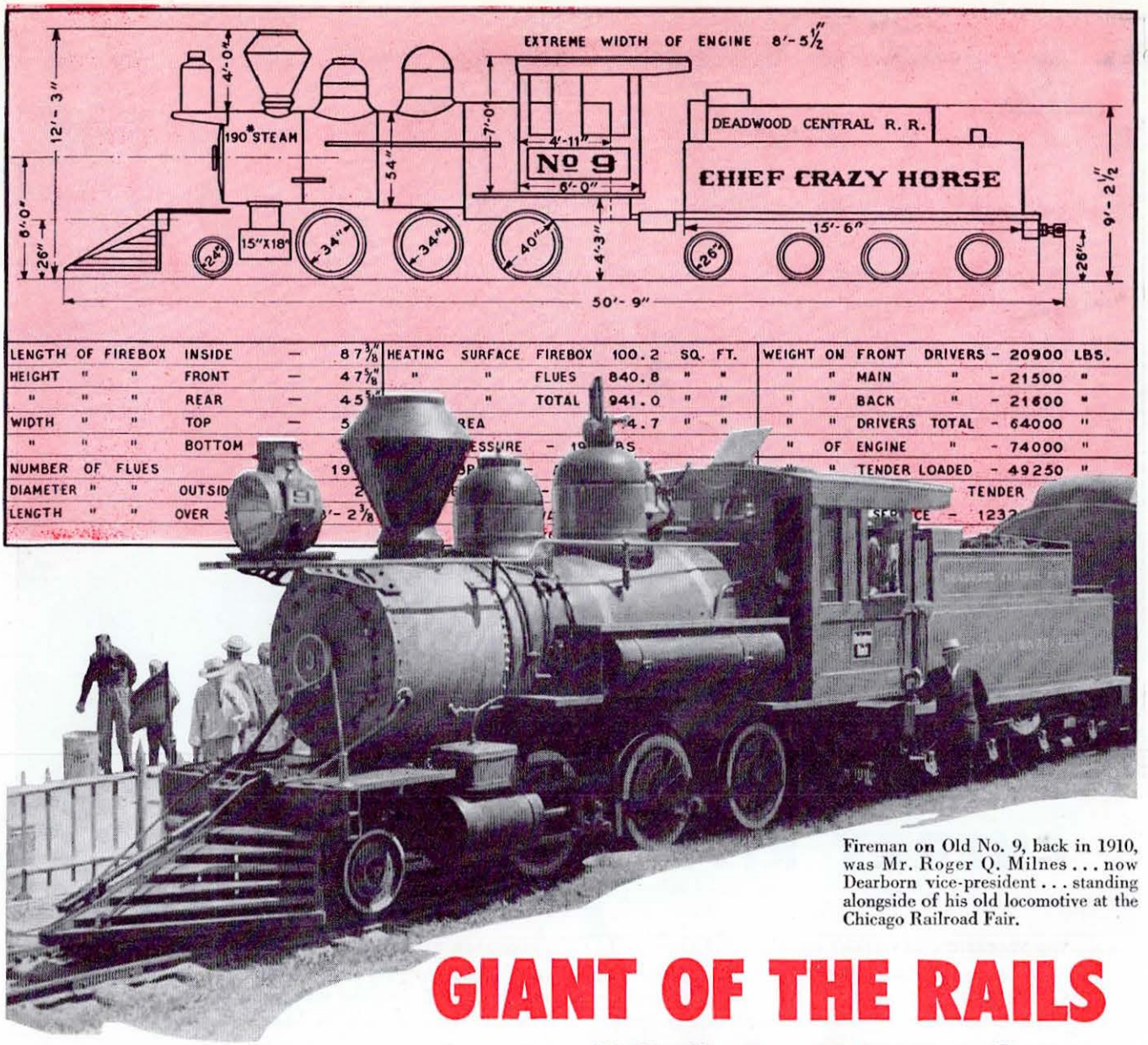
We'll send you complete information without cost or obligation. Write for full details, including significant factual data.

PENTA PRESERVATIVE

containing pentachlorophenol, product of The Dow Chemical Company



CHAPMAN CHEMICAL COMPANY ★ 707 Dermon Building, Memphis 3, Tennessee



Fireman on Old No. 9, back in 1910, was Mr. Roger Q. Milnes . . . now Dearborn vice-president . . . standing alongside of his old locomotive at the Chicago Railroad Fair.

GIANT OF THE RAILS . . . 1884 Version

revives old memories at Railroad Fair

OLD ENGINE No. 9, built in 1884, runs again! Originally owned by the Colorado & Southern Railway Company, now a subsidiary of the Burlington Route, Old No. 9 is reliving past glories . . . this summer . . . at the great exhibition of the Chicago Railroad Fair.

In the old days it handled regular and special passenger trains between Denver and Leadville. It ran the famous Georgetown Loop between Denver and Silver Plume, Colorado.

Today, amid the pomp and pageantry of the Railroad Fair, surrounded by modern steam and Diesel-electric locomotives, quaint Old No. 9 carries gallantly on with its original firebox and boiler, its 190 pounds of steam pressure, tractive effort of 16,351 pounds, and a tender which totes 1600 gallons of feed water, treated now . . . as in the glorious past . . . with Dearborn water treatment.

Dearborn
TRADE MARK REGISTERED

The Leader

IN BOILER WATER TREATMENT
AND RUST PREVENTIVES

DEARBORN CHEMICAL COMPANY
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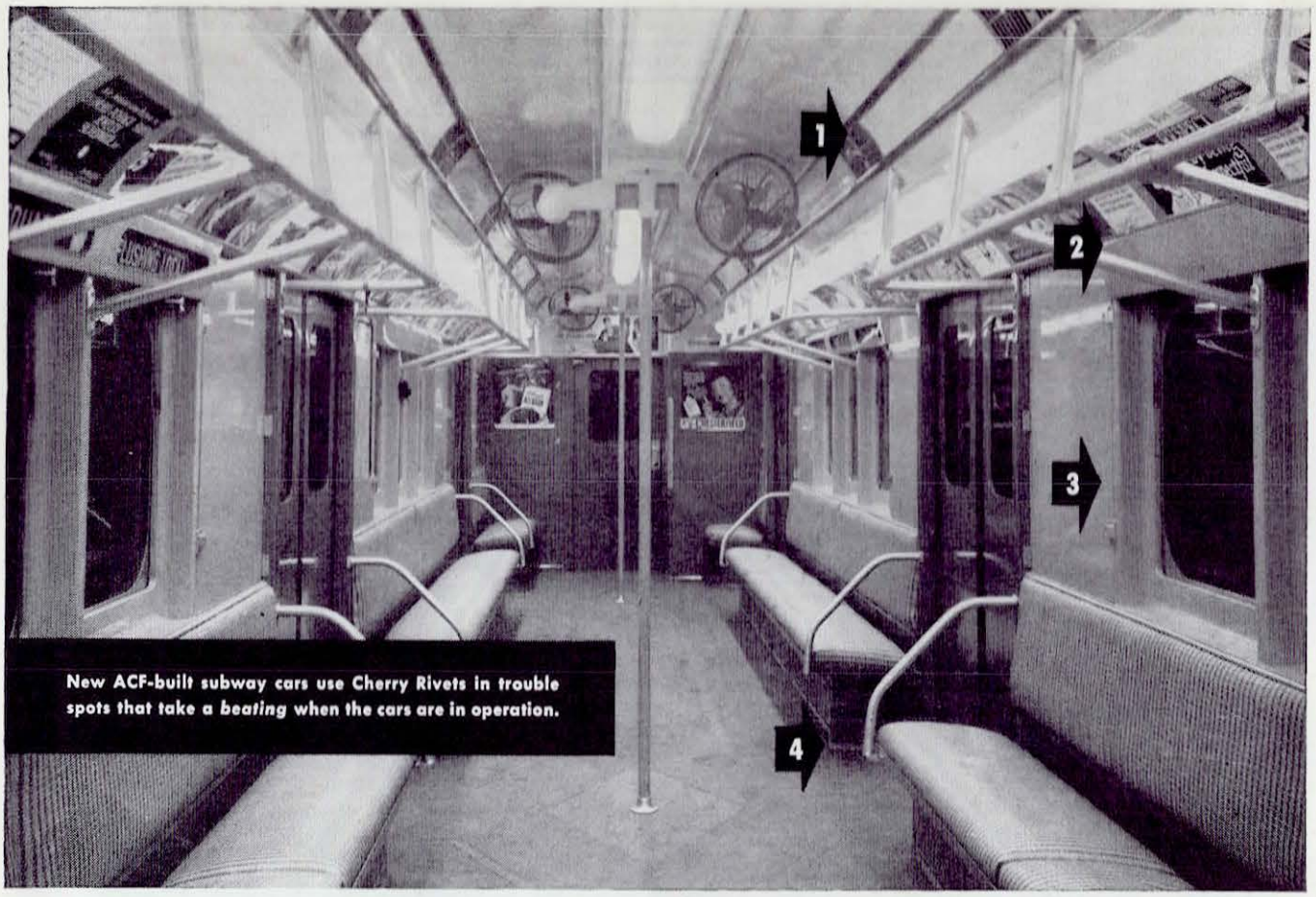
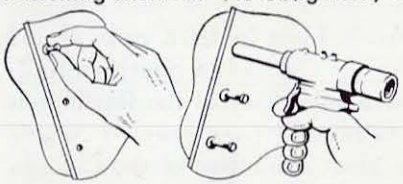


CHERRY RIVETS make the hard jobs easy

THE VIBRATION RESISTANT QUALITY of Cherry Rivets is an outstanding reason why ACF uses Cherry Rivets in a number of typical trouble spots. These applications cut down overall maintenance costs for the operator, give his cars longer life. Here are four of these Cherry Rivet applications:

1. **Fastening of snap rails running entire length of cars.**
2. **Fastening of car card advertising background and holders on interior.**
3. **Fastening of window sash guides to side sheeting.**
4. **Fabrication of seat supports to themselves and to the flooring.**

UNEQUALED FOR MAINTENANCE. In maintenance work, Cherry Rivets stand alone . . . unequaled. Easy to install. Easy to remove. Easy to replace. Whether for assembly or repair, Cherry Rivets provide a stronger, vibration-resistant fastening method for lowered maintenance costs *plus* the exceptional advantage of enhanced appearance. Write today for the Cherry Rivet folder "A Faster Fastening Method." No obligation, of course.



First—insert the rivets in pre-drilled holes.

Second—install by actuating the gun and pulling the stem through the rivet shank.

Made from aluminum, steel, or Monel, standard Cherry Rivets come in five diameters, two head styles, and a wide range of grip lengths. SEE WHAT CHERRY RIVET FASTENING METHODS CAN DO FOR YOU. WRITE TODAY FOR THE CHERRY RIVET FOLDER—*A FASTER FASTENING METHOD*. Address Dept. I-342, CHERRY RIVET COMPANY, 231 Winston St., Los Angeles 13, California.

Name_____

Company_____

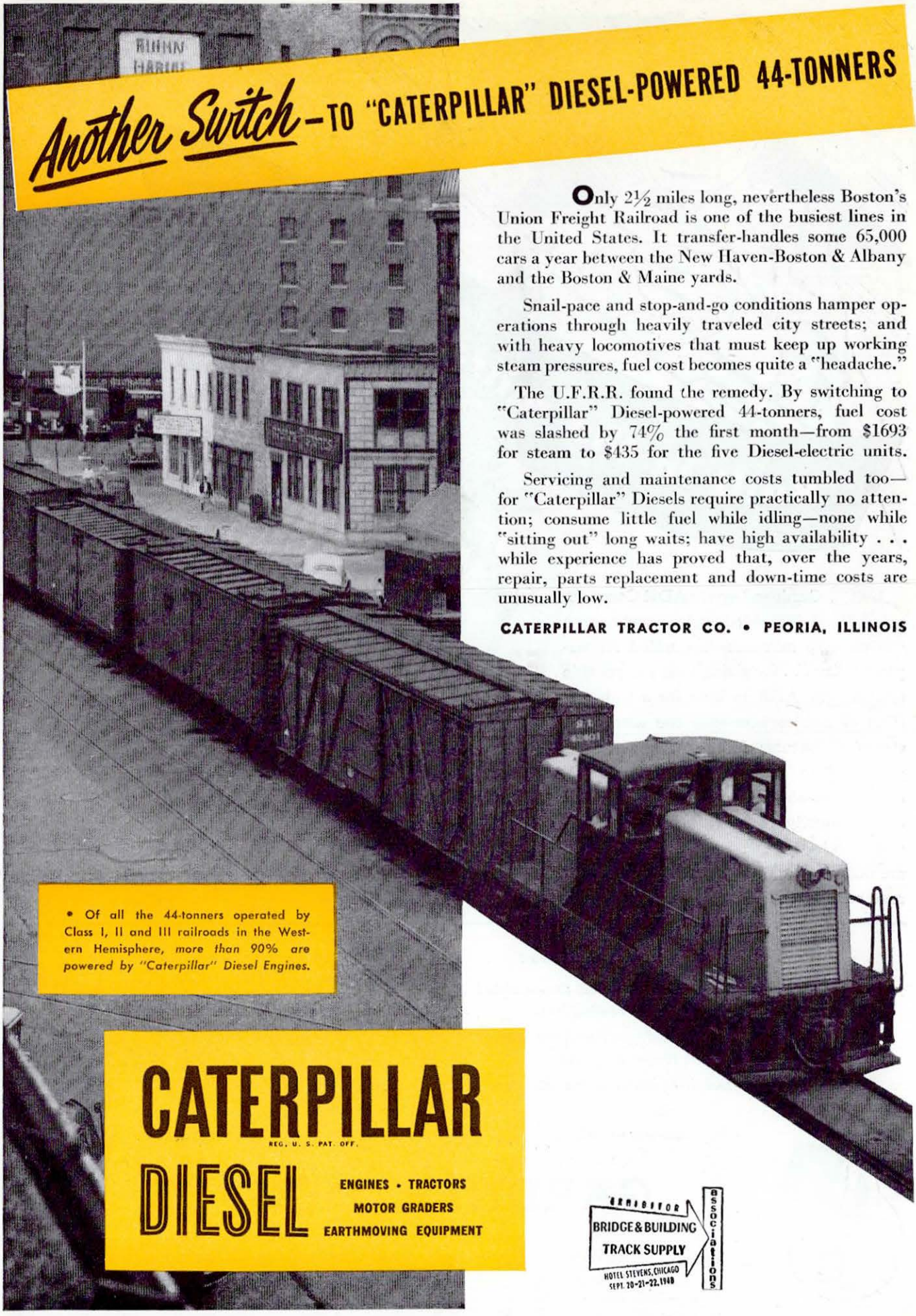
City_____ Zone___ State_____

Cherry Rivet
COMPANY

HOME OFFICE—CHERRY RIVET CO., 231 Winston Street, Los Angeles 13, Calif.
Distributed in principal cities

*CHERRY RIVETS APPROVED BY U. S. ARMY & NAVY AIR FORCES, CIVIL AERONAUTICS AUTHORITY, AND UNDERWRITERS' LABORATORIES, INC., ARE PATENTED.

Another Switch—TO "CATERPILLAR" DIESEL-POWERED 44-TONNERS



Only 2½ miles long, nevertheless Boston's Union Freight Railroad is one of the busiest lines in the United States. It transfer-handles some 65,000 cars a year between the New Haven-Boston & Albany and the Boston & Maine yards.

Snail-pace and stop-and-go conditions hamper operations through heavily traveled city streets; and with heavy locomotives that must keep up working steam pressures, fuel cost becomes quite a "headache."

The U.F.R.R. found the remedy. By switching to "Caterpillar" Diesel-powered 44-tonners, fuel cost was slashed by 74% the first month—from $1693 for steam to $435 for the five Diesel-electric units.

Servicing and maintenance costs tumbled too—for "Caterpillar" Diesels require practically no attention; consume little fuel while idling—none while "sitting out" long waits; have high availability . . . while experience has proved that, over the years, repair, parts replacement and down-time costs are unusually low.

CATERPILLAR TRACTOR CO. • PEORIA, ILLINOIS

• Of all the 44-tonners operated by Class I, II and III railroads in the Western Hemisphere, *more than 90% are powered by "Caterpillar" Diesel Engines.*

CATERPILLAR
REG. U. S. PAT. OFF.
DIESEL
ENGINES • TRACTORS
MOTOR GRADERS
EARTHMOVING EQUIPMENT

EXHIBITOR
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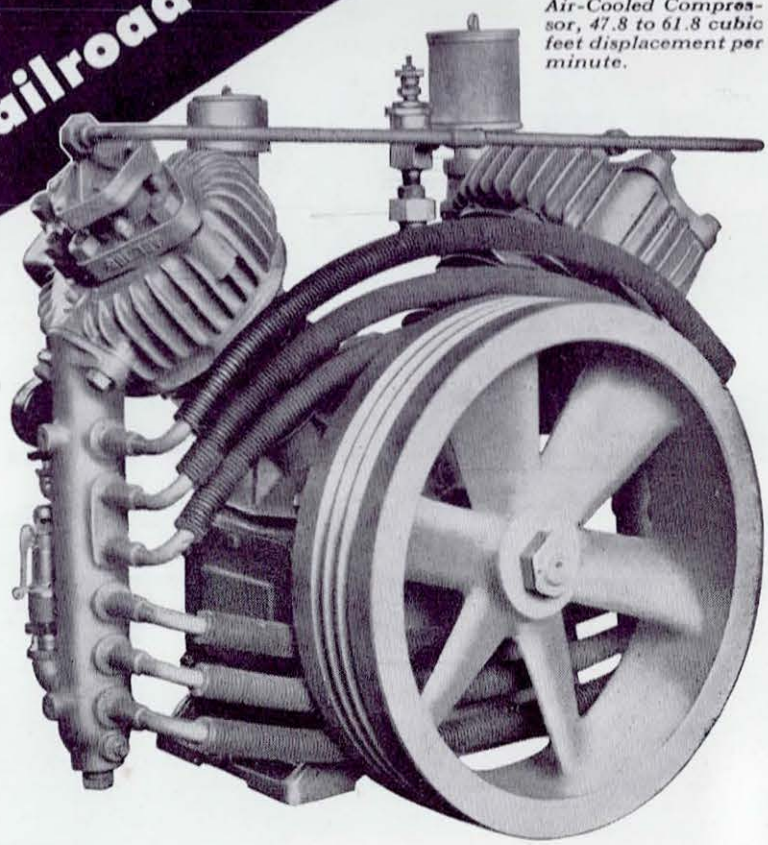
ASSOCIATIONS
HOTEL STEVENS, CHICAGO
SEPT. 20-21-22, 1948

Built in the railroad tradition



Gardner-Denver ADR Air-Cooled Compressor, 47.8 to 61.8 cubic feet displacement per minute.

Gardner-Denver ADR Compressors—like the seasoned engineers who serve the nation's railroads—are noted for dependability . . . for giving long and reliable service. The ADR is ideal for a wide variety of applications—has the same construction features found on larger compressors. The Gardner-Denver high quality of workmanship and materials is maintained equally in all compressors—large and small. Gardner-Denver Compressors are manufactured throughout to meet railroad standards.

You'll want these features:

* *Drop forged alloy steel crankshaft with integral counterweights.*
* *Timken tapered adjustable roller mirror finish main bearings.*
* *Controlled lubrication for all bearings. Screen type crankcase breather keeps oil in and dirt out.*
* *Constant speed control automatically loads and unloads compressor.*
* *Duo-plate cushioned valves—for long life.*

For complete information, write Gardner-Denver Company, Quincy, Illinois

GARDNER-DENVER SINCE 1859

6 POINTS TO REMEMBER WHEN CHOOSING

RAILROAD PASSENGER CAR BATTERIES

EXTRA LONG LIFE. EDISON batteries outlast all others in railroad service. When they finally complete their service life in heavy-duty air conditioning, regroup the cells and get a *second life* in lighter-duty service.

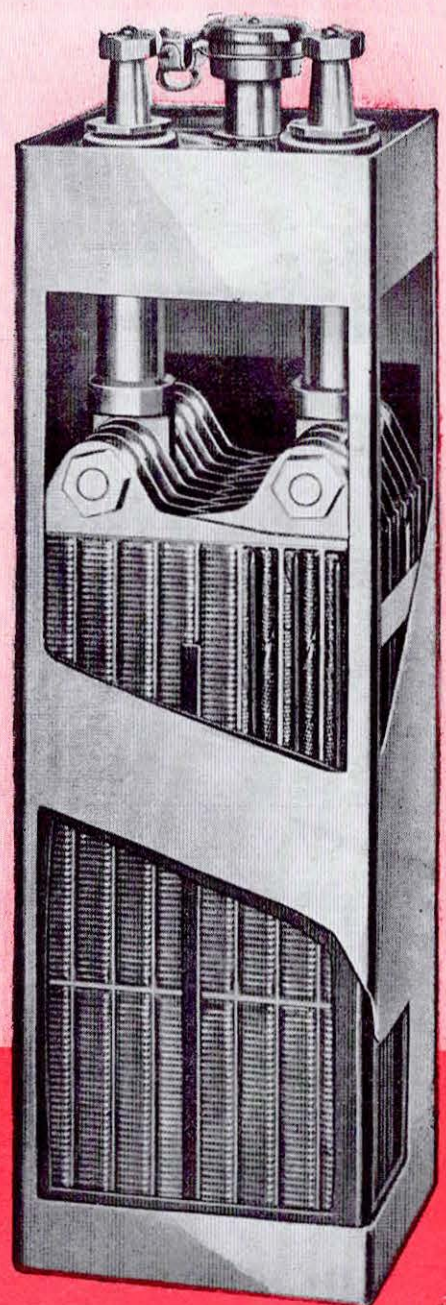
DEPENDABILITY. The name EDISON has been synonymous with dependability for over half a century. EDISON cells provide the closest approach to failure-free standby power known. They won't quit unexpectedly and are easily maintained.

INCREASED DEMANDS. Today's passenger car electrical systems carry unprecedented loads and so require bigger batteries. EDISON, the *original lightweight battery*, has higher capacity per pound . . . keeps total weight down.

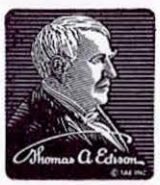
STEEL CONSTRUCTION. All EDISON cell containers, pole pieces, grids—even the tubes and pockets containing active materials—are made of rugged steel. The alkaline electrolyte is a recognized preservative of steel.

OVERALL ECONOMY. Select EDISON batteries for long-range economy because they stay on the job, out of the repair shop. They are not subject to injury by freezing, accidental short-circuiting or reverse charging.

NICKEL-IRON-ALKALINE PRINCIPLE. This original EDISON principle is chemically foolproof, electrically trouble-free. For these reasons it is the basis for long life, dependability and overall economy in EDISON batteries.



Cutaway view of A8H Edison cell at right illustrates its all-steel construction, including the tubular positive plates.



EDISON

Nickel • Iron • Alkaline

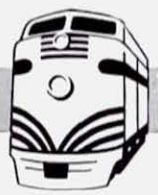
STORAGE BATTERIES

EDISON STORAGE BATTERY DIVISION OF THOMAS A. EDISON, INCORPORATED, WEST ORANGE, N. J.

HARRISON COOLING

Throws the Red Block

ON OVERHAULS



Over millions of miles—Diesel locomotives have built up an impressive record of availability.

Impressive, too, is the part played by Harrison radiators and oil coolers in helping to achieve this record.

These rugged cooling units stand guard over heat—they maintain the jacket water and lube oil temperatures that insure top performance—and reduce maintenance.

Harrison cooling helps to make Diesel locomotives the most efficient and durable power units on the road today.

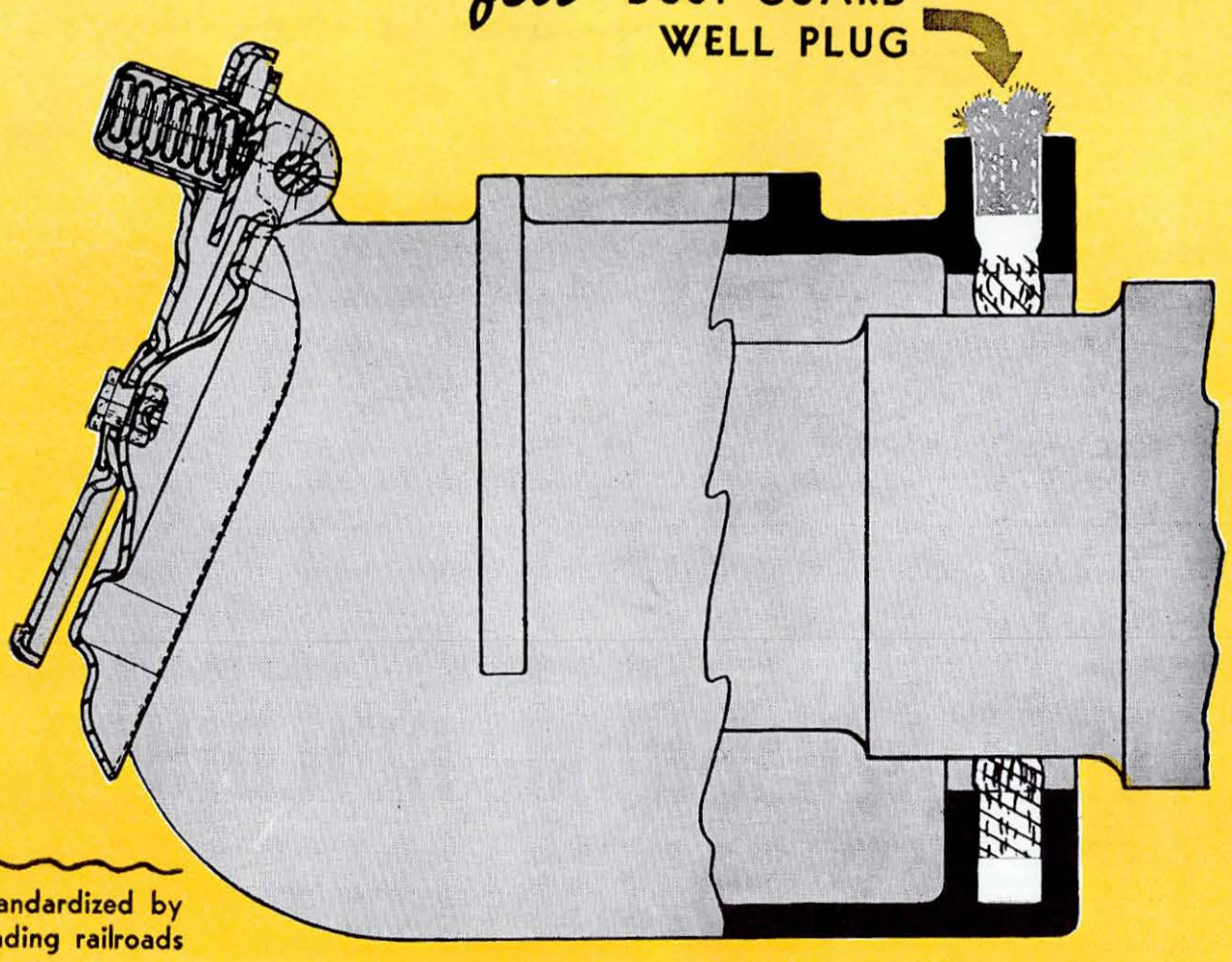
HARRISON

RADIATORS • OIL COOLERS FOR DIESELS

HARRISON RADIATOR DIVISION OF **GENERAL MOTORS CORPORATION, LOCKPORT, N. Y.**

T-Z
"CLINGTITE"

felt DUST GUARD
WELL PLUG



Standardized by leading railroads

Supplied in all A. A. R. sizes

No. 8 — 4¼"x 8"
No. 9 — 5 "x 9"
No. 10 — 5½"x10"
No. 11 — 6 "x11"
No. 12 — 6½"x12"

1. Economical
2. Keeps waste sponging much cleaner
3. No waste
4. Special material
5. Light weight
6. Unbreakable
7. Flexible
8. Stays in place
9. MINIMUM LABOR
10. Success-proved, after 3½ years' actual road service tests
11. Meets A. A. R. specifications
12. Patented—No. 2,417,853

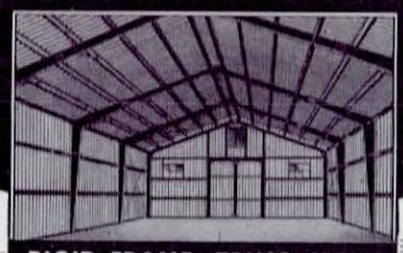
T-Z RAILWAY EQUIPMENT CO., INC.
G. S. TURNER, PRESIDENT
8 South Michigan Avenue, Chicago 3, Illinois

BUTLER BUILT

Adaptable to Your Needs AT LOW COST

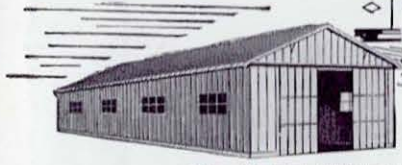
50 FEET WIDE

40 FEET WIDE

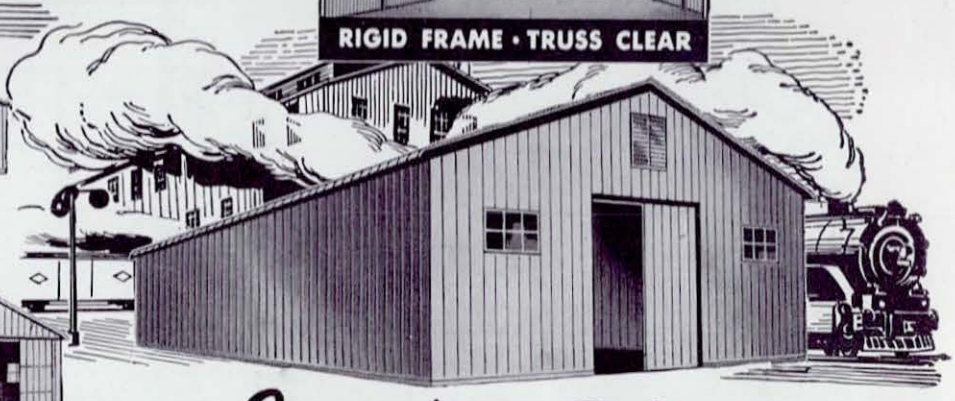


RIGID FRAME • TRUSS CLEAR

32 FEET WIDE



20 FEET WIDE



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STEEL • ALUMINUM BUILDINGS

Aluminum has great resistance to sulphur-bearing smoke. That's why these Butler buildings with heavy aluminum sheeting in sidewalls and roof are especially suited for use as freight stations, warehouses, machine and parts shelters, repair and tool shops, and many other railroad uses.

Full space use, complete adaptability, speedy erection and low cost mean greater economy and convenience with Butler Steel-Aluminum Buildings (the first rigid frame type construction to be mass-produced).

Butler Rigid Frame, Truss-Clear Buildings are available in 50 ft. and 40 ft. widths, lengths in any multiple of 20 ft. Also in 20 ft. and 32 ft. widths, lengths any multiple of 12 ft.

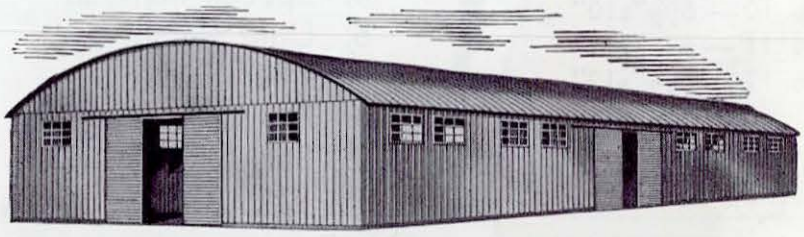
Mail coupon today for complete information.

- ★ Rigid Frame, Truss-Clear Design, Straight Sidewalls
- ★ Width—Length—Height Variable
- ★ Less Cost Per Square Foot
- ★ Special Deeply Corrugated Sheets, Bolted-on Aluminum Covering
- ★ Die-Formed Eaves and One-Piece Roof Ridge Sheet (No Ridge Roll).

CONTACT YOUR NEAREST BUTLER BUILDING DISTRIBUTOR

Also Available—60′ x 100′ x 14′ BOWSTRING TRUSS CONSTRUCTION

Sturdy steel-aluminum building with full usable space. Door and window locations optional. Length variable. Adaptable to many uses including hangar for airplanes.



BUTLER MANUFACTURING COMPANY

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7334 East 13th St., Kansas City 3, Mo. or
934 Sixth Ave. S. E., Minneapolis 14, Minn.

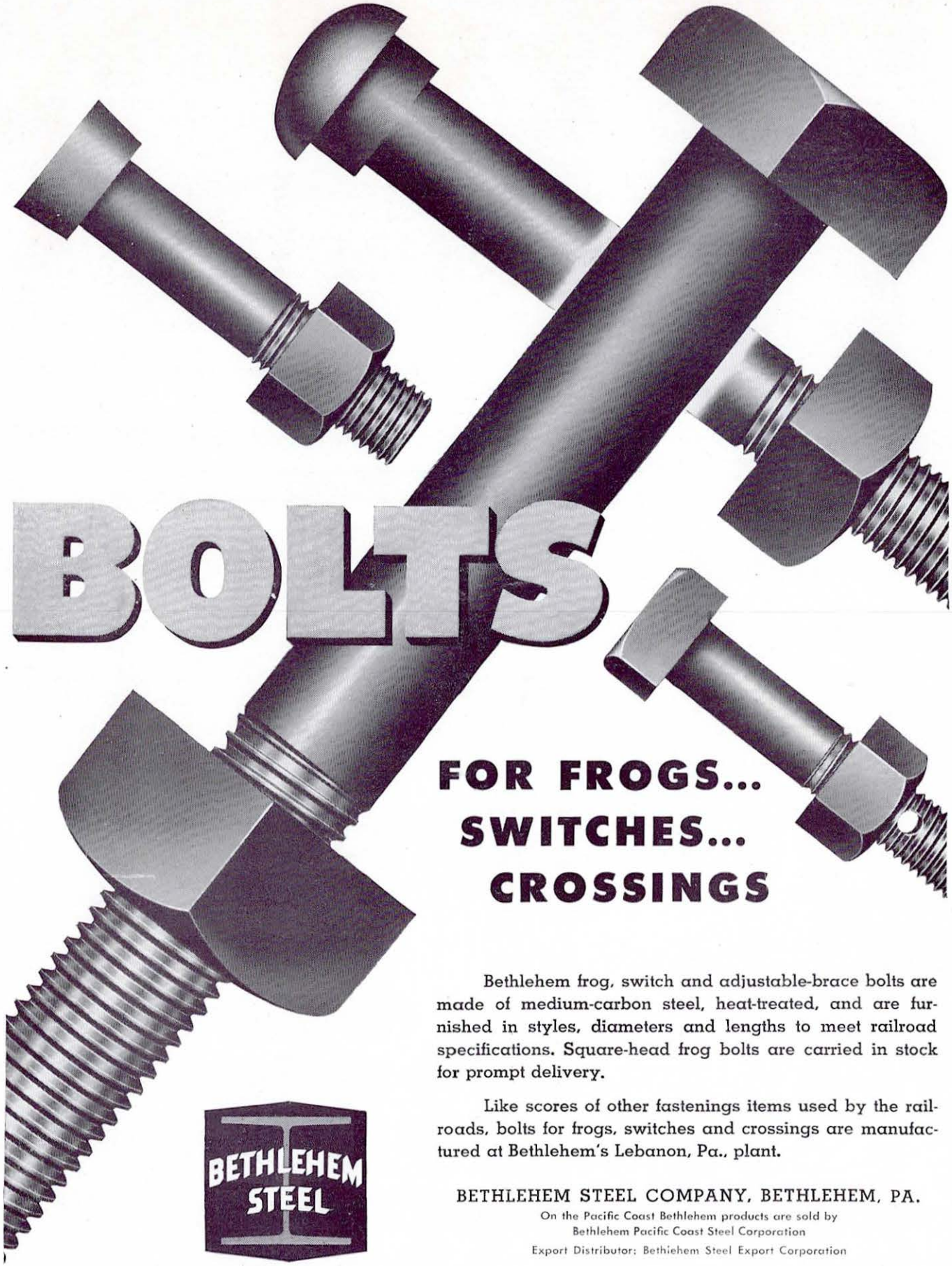
Send Complete Information on Butler Building viz:

☐ 40 Ft. wide x_____ft. long ☐ 32 ft. wide x_____ft. long
☐ 50 Ft. wide x_____ft. long ☐ 20 ft. wide x_____ft. long
☐ 60 Ft. wide x_____ft. long

NAME _____

ADDRESS _____

CITY_____ZONE_____STATE_____



FOR FROGS... SWITCHES... CROSSINGS

Bethlehem frog, switch and adjustable-brace bolts are made of medium-carbon steel, heat-treated, and are furnished in styles, diameters and lengths to meet railroad specifications. Square-head frog bolts are carried in stock for prompt delivery.

Like scores of other fastenings items used by the railroads, bolts for frogs, switches and crossings are manufactured at Bethlehem's Lebanon, Pa., plant.

BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by
Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

Bethlehem supplies every type of Railroad Fastening

More NEW WINGS

Lounge Grill Coaches

Travellers on the "Sunflower" and "Southerner" may enjoy refreshments and light meals in the lounge, or right at their seats on *portable* tables. Cars seat 44 passengers in individual reclining, rubber-foam cushioned chairs, while 9 persons can be served in the lounge. The grill whips up the snacks!

The Diner Lounges on the "Texas Eagle"

Seats 32 for meals. Canary yellow ceilings and blue drapes harmonize with other decorative effects. A plexiglass partition creates an air of coziness without crowding.

THE TEXAS AND PACIFIC RAILWAY
TEXARKANA · SHREVEPORT · EL PASO · NEW ORLEANS

a.c.f.

CAR BUILDERS TO AMERICA'S

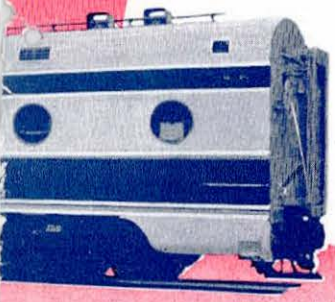
FOR THE "EAGLES"

MISSOURI PACIFIC LINES

Look over these 'last-word' passenger cars that are currently attracting capacity crowds to the Missouri Pacific, and The Texas & Pacific—testimonials to the car-building skill of A.C.F.!

It's part of a 69 car order that includes dining and dining lounge cars, lounge-grill, coaches, deluxe reclining seat coaches, coach-dormitory cars, and baggage-railway post office cars. The stamp of A.C.F. craftsmanship is clearly in evidence—from their high-tensile steel underframes to their smartly appointed interiors—the kind of car construction that helps build the Railroads' reputation.

American Car and Foundry Company, New York • Chicago • St. Louis • Cleveland Philadelphia • Washington Pittsburgh • San Francisco.



Ultra-modern Dining Cars

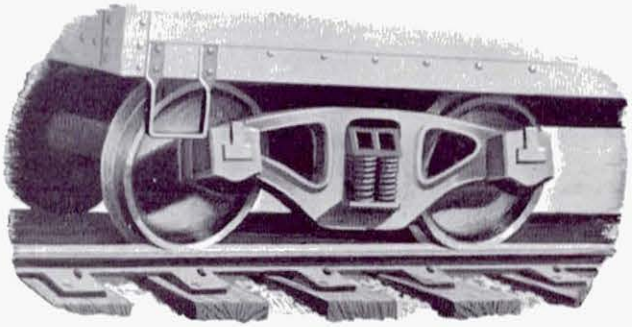
With wide-view windows at your elbow, dining becomes a happy combination of fine fare and sight-seeing. Representing the latest in decor, this dining car seats 44, and does it comfortably! It boasts roller-bearing equipped trucks to insure a smooth, memorable ride on the "Texas Eagle"!

RAILROADS

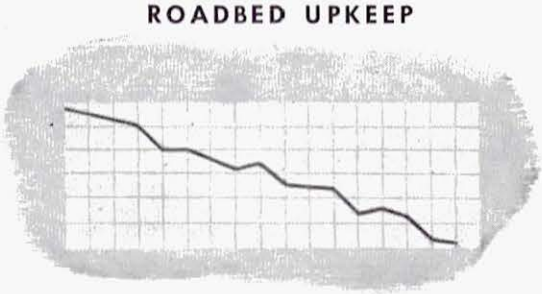
TAMPING ROADBEDS WITH BARCO MEANS...

Passengers have a Smoother Ride

Equipment Lasts Longer



Maintenance Costs Go Down

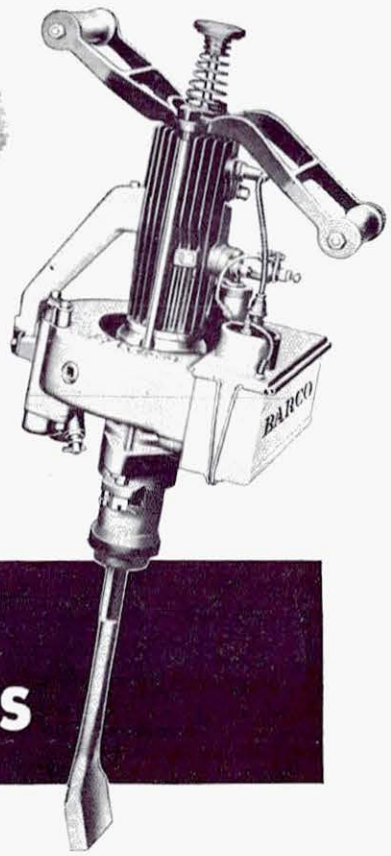


Because

Barco tytampers permit the best spot tamping that is possible to obtain.

Because the roadbed is smoother, the equipment is not subject to jars, shocks, and wear.

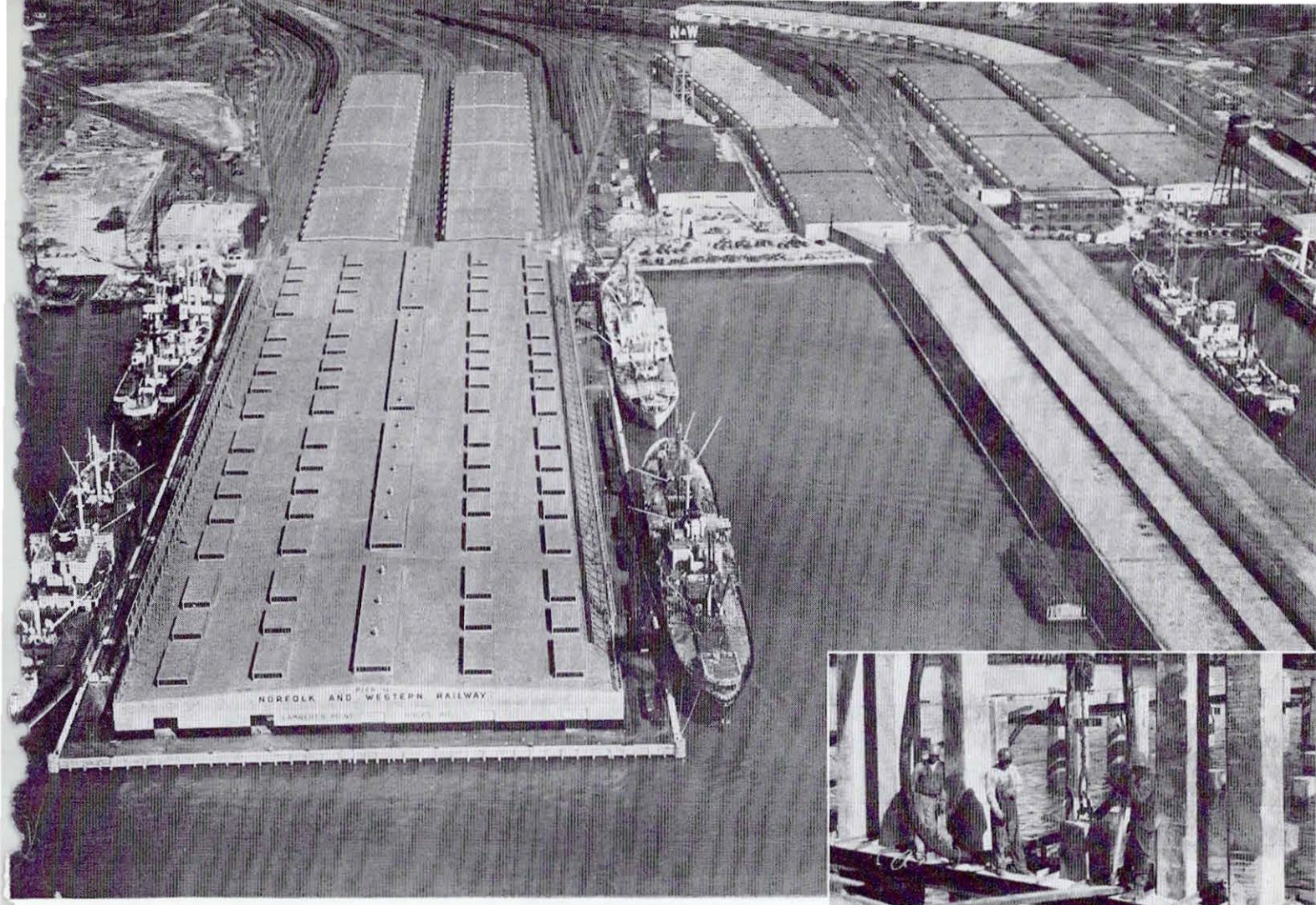
Maintenance costs go down because no tytamper gives as much tamping perfection and track permanence per dollar of expenditure.

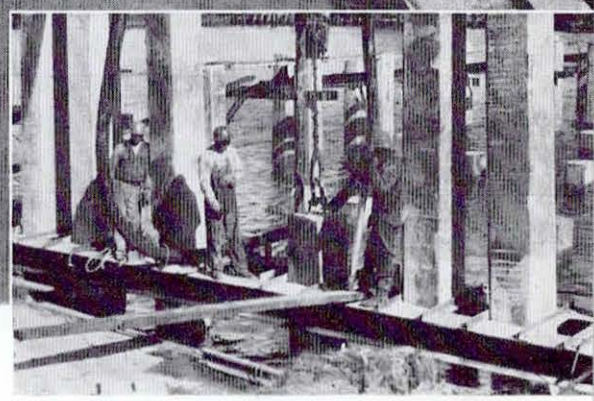


Write to Barco Manufacturing Company, 1800 Winnemac Ave., Chicago 40, Ill.
In Canada: The Holden Co., Ltd., Montreal, Canada

Free Enterprise—the Cornerstone of American Prosperity

BARCO UNIT TYTAMPERS





70,000 Cu. Yds. of Pozzolith Concrete used in Construction of Piles, Piers and Abutments of New Norfolk and Western Ry. Pier N (left). Largest Single Deck Pier on Atlantic Seaboard. Contr.—McLean Contracting Co., Baltimore, Md.

Giant Norfolk and Western Ry. Pier built with POZZOLITH CONCRETE

OTHER MASTER BUILDERS PRODUCTS IN WHICH CEMENT DISPERSION IS EMPLOYED

EMBECO...
For non-shrink grouting and re-integration.

MASTERPLATE...
Industry's toughest floor . . . "the iron that stays on top."

OMICRON MORTARPROOFING..
Controls shrinkage cracks; minimizes leaky brickwork, also re-tempering; contains stearate.

The decision of Norfolk and Western to employ Pozzolith in this mammoth pier resulted from experience on previous projects where they used "a great quantity of Pozzolith with excellent results." In the 6,000 piles, piers, and abutments required for this ten-acre pier, Pozzolith, cement dispersion, provided the following advantages:

1. Plasticity and homogenity . . . resulting in easier placing and better concrete.
2. High early strength . . . permitting quicker re-use of forms and driving of piles in 2 weeks after pouring instead of 3 as planned.
3. Great durability . . . providing important resistance to the corrosive action of sea water.

Normal concrete of *any given quality* is produced at lower cost with Pozzolith than by any other means, such as the addition of extra cement or of any other admixture either added at the mixer or interground.

Write for information and Pozzolith booklet.

the MASTER BUILDERS Co.

CLEVELAND 3, OHIO TORONTO, ONTARIO

THE EQUIPMENT *Experience built*

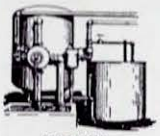
Where a water is required equivalent to that obtained through distillation, a wide range of industries have found the cost per gallon greatly reduced by the demineralization process.

The Graver demineralizer . . . the equipment experience built . . . delivers a water that contains but a negligible amount of dissolved solids. Where the sodium zeolite system eliminates hardness, the demineralizer actually produces an effluent equivalent to distilled water.

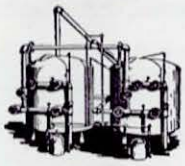
The same experience responsible for the Graver demineralizer is available in all of the various types of water conditioning equipment offered by Graver. The Graver service covers every phase of engineering, manufacturing, installation and maintenance for every type of unit. It will be a valuable service on your next water conditioning job. Why not find out *more* today?

HOT PROCESS SOFTENERS

GRAVER



ZEOLITE SOFTENERS



FILTERS

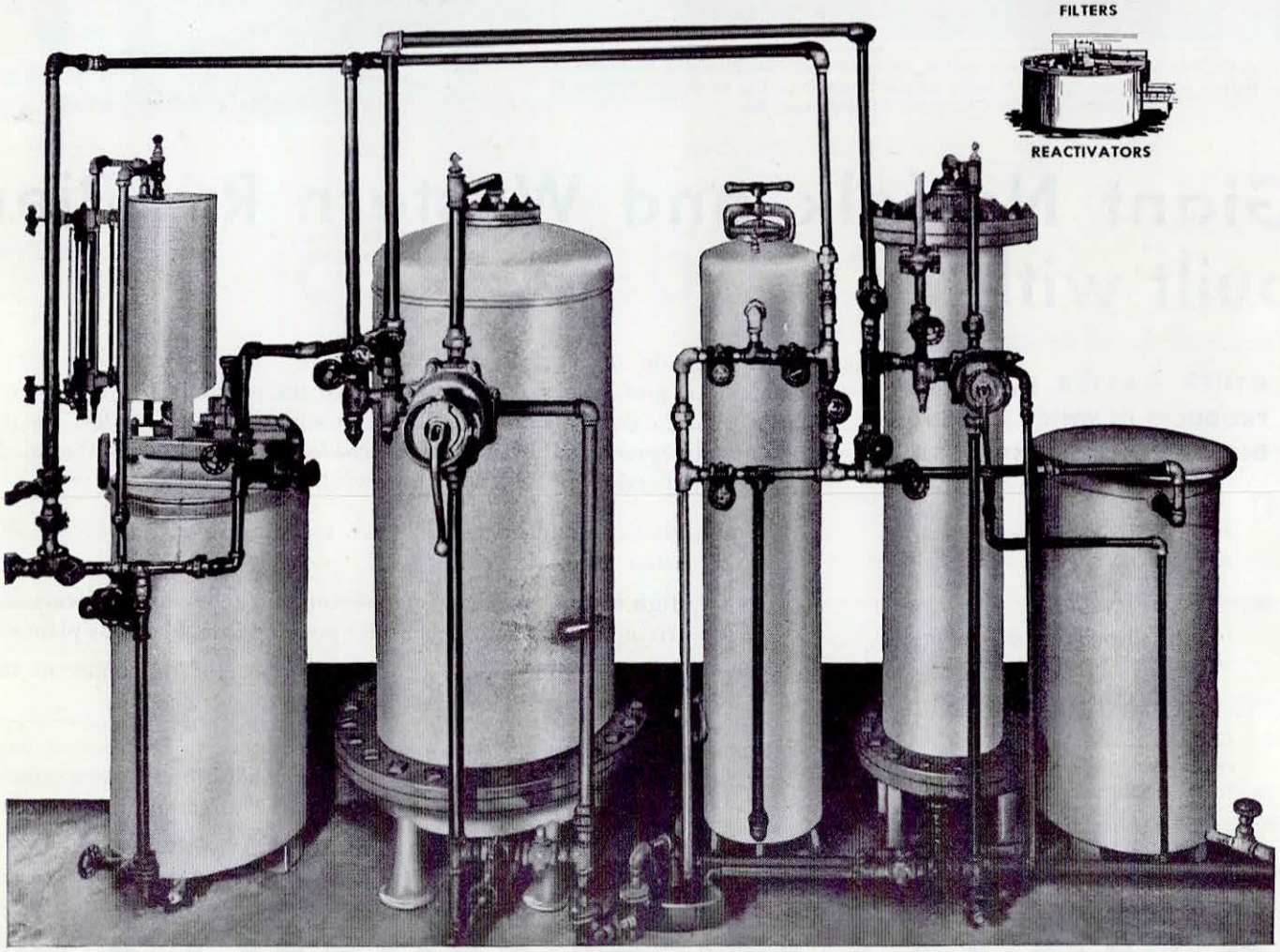
REACTIVATORS

WATER CONDITIONING AND PROCESS EQUIPMENT DIVISION

GRAVER TANK & MFG. CO., INC.

East Chicago, Indiana

NEW YORK • PHILADELPHIA • CHICAGO



Every Railroad's Greatest Asset
PUBLIC SAFETY

Here a few detected rail failures containing Transverse Defects have been broken for analysis. Seventy-two (72%) of the Transverse Defects found in 1947 were small in size—a good indication of Sperry efficiency.

GUARDED FOR MORE THAN 100 RAILROADS BY SPERRY'S FLEET OF 20 DETECTOR CARS

During 1947, Sperry Detector Cars found approximately 47,000 rails containing Transverse Defects —equivalent to 28.5 TD's per 100 track miles tested and an increase of almost three TD's per 100 miles over the 1946 figures.

Also during 1947, approximately 36,000 Longitudinal Defects (Vertical and Horizontal Split Heads) were found, making 1947 the sixth consecutive year in which more than 35,000 Longitudinal Defects have been detected.

The annual results again confirm the superiority of *Sperry-operated* Detector Cars which find:

1) MORE TRANSVERSE DEFECTS — and of smaller size — than any other method of testing rails in track, and
2) MORE LONGITUDINAL DEFECTS — than any other method of testing rails in track.

Higher train speeds and greater axle loads have increased the need for effective rail testing. Today as always, Sperry stands ready to make comparative demonstration tests to prove superior performance.

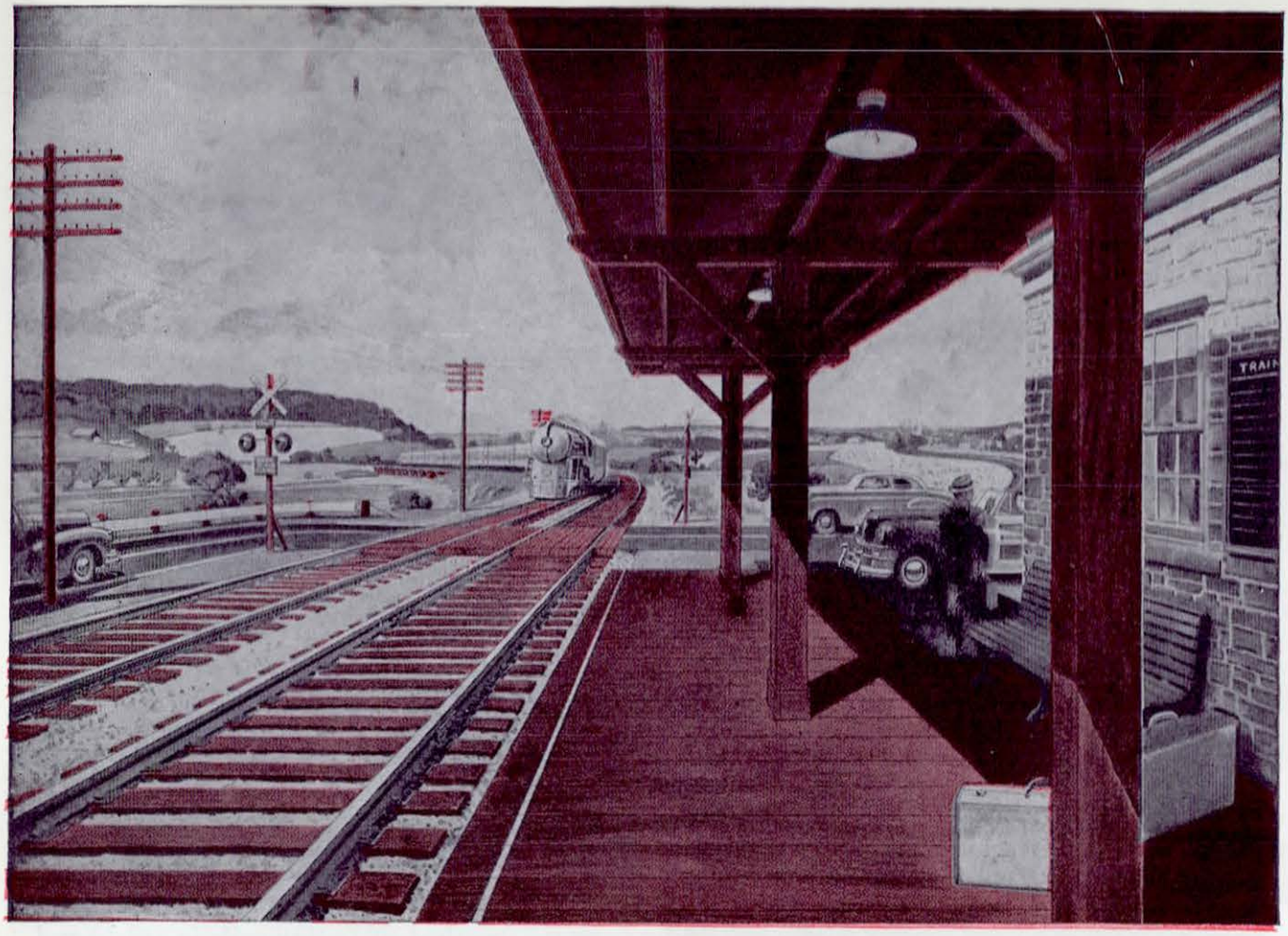
SP-124

Safety with Sperry

for
Testing Rails in Track

SPERRY RAIL SERVICE

DIVISION OF SPERRY PRODUCTS, INC.
Chicago, Ill., DANBURY, CONN., St. Louis, Mo.



Here's how to PROFIT from SAVINGS with

PRESSURE-TREATED WOOD

There are seven important economies suggested in this picture. How many can you spot . . . and how many are you making on *your* lines? The answer is important. For today, more than ever before, *railroad profits must come from savings.* And every place that wood is used, *pressure-treated* wood can help to cut your costs.

CROSS TIES

Your own tie records will show the economy of pressure-treated wood. Savings from this source alone averaged 20% of railroad profits during a recent ten-year period.

POLES AND POSTS

The lower cost per year of full-length pressure-creosoted poles and posts has been demonstrated by countless utility and highway installations. Further—Koppers will handle your poles on a contract basis, just as your ties are handled now.

PLATFORMS

The "mechanical" failures that force frequent platform repairs generally *start* from decay. Pressure-treatment extends life, helps to minimize wear.

BRIDGES AND CROSSINGS

One major railroad reports over 40 years service from their pressure-treated wood bridges; total annual charges often run less than interest charges alone on bridges built of other materials. Koppers Crossings save on maintenance and replacement.

FIRE-RETARDANT CONSTRUCTION

Koppers CZC(FR) treatment for lumber and structural members greatly expands the possible applications for wood. Treatment gives a high degree of fire-retardance, also protects against termites and decay. A new bulletin, "Koppers Fire-Retardant Wood" gives full details.

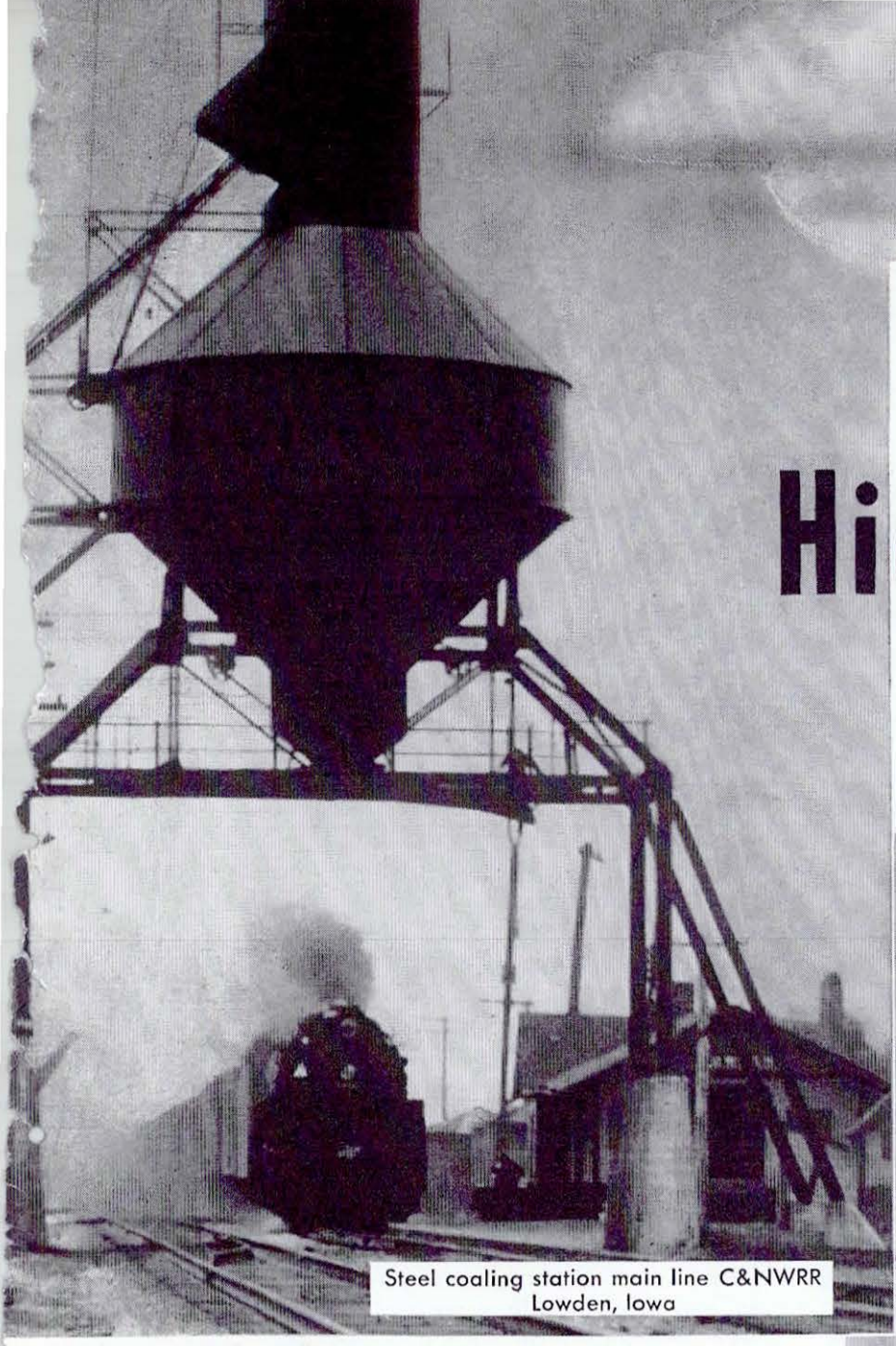
KOPPERS

PRESSURE-TREATED WOOD

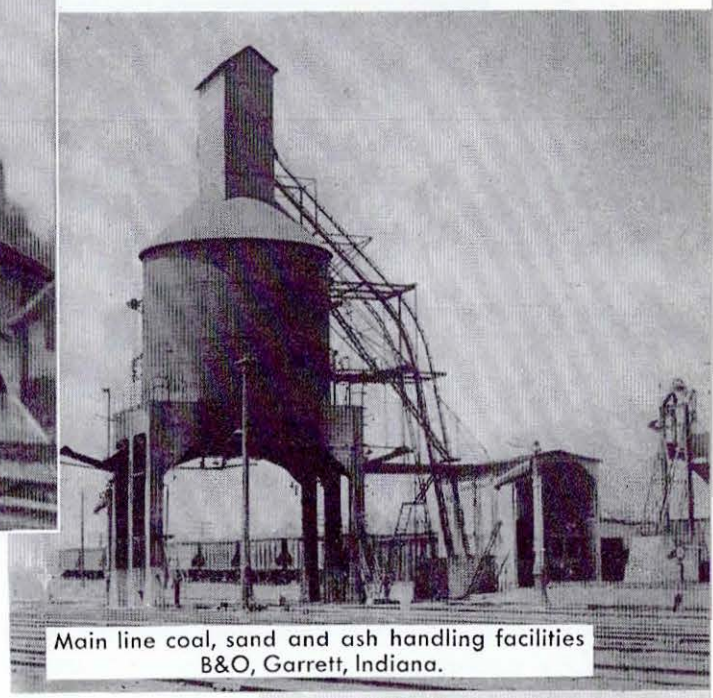
KOPPERS COMPANY, INC.

PITTSBURGH 19, PENNSYLVANIA

Highballing!

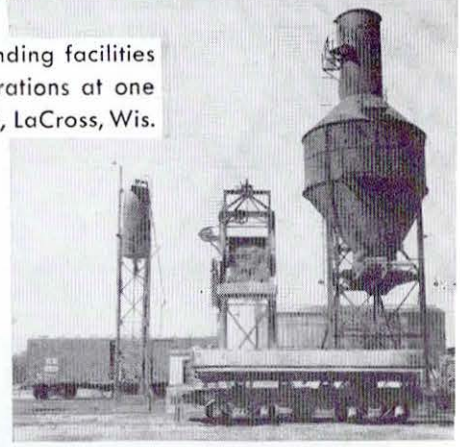


Steel coaling station main line C&NWRR
Lowden, Iowa



Main line coal, sand and ash handling facilities
B&O, Garrett, Indiana.

Highballing! That's what the Railroads are doing today ... with longer trains and faster schedules! Maintenance of today's high-speed schedules requires split-second timing, high efficiency in all phases of the operation. *For 37 years Ogle has kept pace with modern railroading by providing modern, efficient coal, ash and sanding facilities which cut down time spent in these operations.*



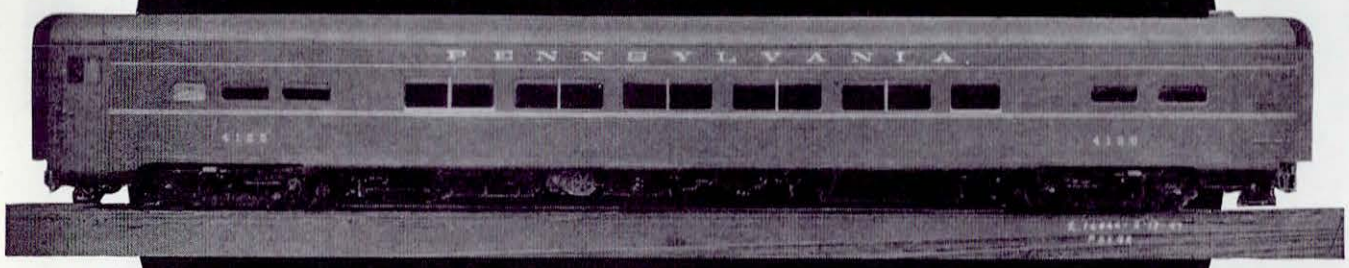
Coal, ash and sanding facilities permitting 3 operations at one spotting. CB&QRR, LaCross, Wis.

DIESEL SANDING? *Yes! Ogle offers the most efficient installations available!*

OGLE CONSTRUCTION CO.

175 WEST JACKSON BOULEVARD, CHICAGO 4, ILLINOIS

It's Yoloy



FOR THE NEW LOOK IN PENNSYLVANIA COACHES

YOLOY Steels were included in the fabrication of new passenger coaches built recently by The Pennsylvania Railroad in its Altoona Works. The use of High Tensile Steel in these cars reduces weight, speeds up service and insures better transportation.

Yoloy is Youngstown's high strength, low-alloy, nickel-copper steel. Because of its extreme toughness and extra strength, Yoloy can be used in thinner sheets and lighter structural members than usual, without loss of over-all strength. These physical properties, permitting lighter weight construction, mean elimination of much dead weight.

Yoloy also has unusual ability to resist corrosion, and is highly resistant to shock and abrasion. It welds and forms easily. It has proved its value as a weight-saving, long-life construction material in rail transportation service for more than 13 years.

Youngstown YOLOY STEEL

THE YOUNGSTOWN SHEET AND TUBE COMPANY General Offices — Youngstown 1, Ohio

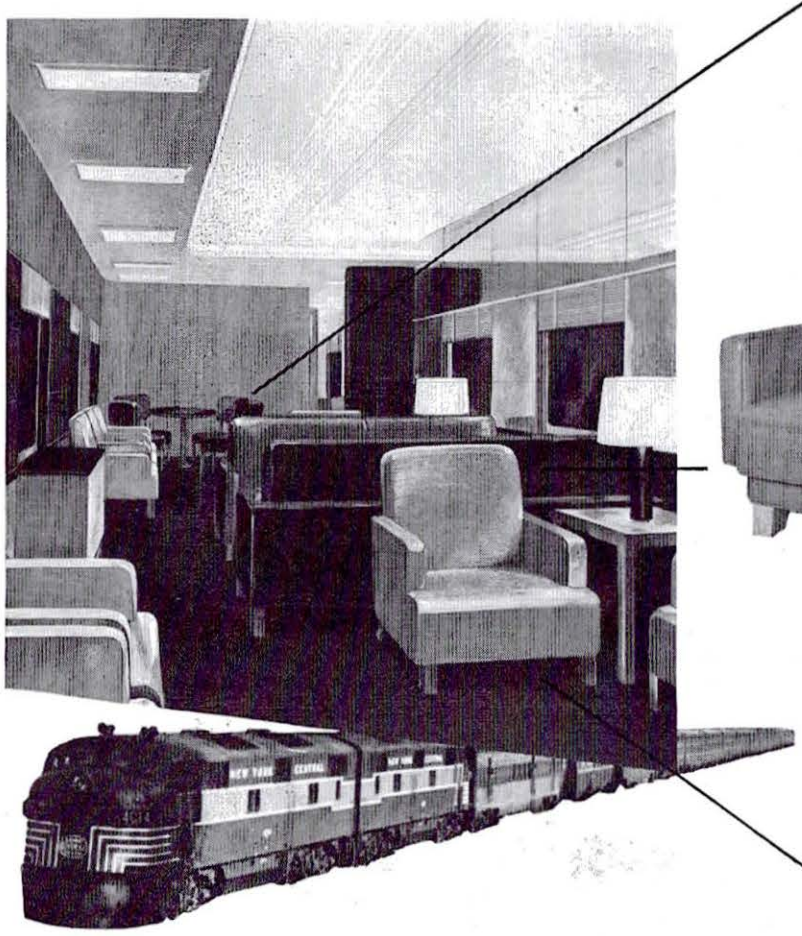
Manufacturers of Carbon, Alloy and Yoloy Steel Export Office - 500 Fifth Avenue, New York

PIPE AND TUBULAR PRODUCTS - CONDUIT - BARS - RODS - COLD FINISHED CARBON AND ALLOY BARS - SHEETS - PLATES - WIRE - ELECTROLYTIC TIN PLATE - COKE TIN PLATE - TIE PLATES AND SPIKES.

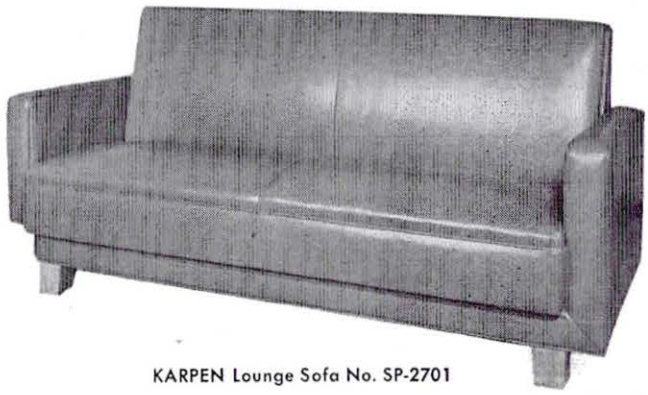
Living Room Comfort

WHILE YOU TRAVEL

Karpen transportation furniture has met the exacting standards of passenger comfort in the new modern Century. Smart Karpen styling is designed to blend in perfectly, to add the finishing touch of modern dignity to this living room on wheels.



KARPEN Card Table Chair No. SP-2702



KARPEN Lounge Sofa No. SP-2701

KARPEN Lounge Chair No. SP-2699

Scientific design, superior construction, finer materials and skilled craftsmanship are the inherent qualities that provide comfort and beauty. Passengers recognize and appreciate this superiority and want to ride again and again. Remember—specify Karpen for maximum comfort and efficiency.

Copyright 1948

S. KARPEN & BROS. TRANSPORTATION SEATING
624 S. Michigan Ave., Chicago • One Park Ave., N. Y.

George B. Cross Company EXCLUSIVE SALES AGENTS . . .

NAILABLE STEEL FLOORING*

Keeps Gondolas Off the Rip Tracks— Out of the Shops

NAILABLE STEEL FLOORING helps keep gondolas off the Bad Order Report, saves you money in floor repair and replacement costs. Check these points that show *why* NAILABLE STEEL FLOORING cuts floor maintenance costs and keeps cars where they belong—on the line, bringing in revenue.

Greater Strength—Channel design gives NAILABLE STEEL FLOORING higher strength, more resistance to dishing than steel plate floors. After months of grinding impacts from magnets, hot pig iron and the clamshell shown, the NAILABLE STEEL FLOOR in a test car retained its over-all flatness and nailability, its suitability for blocked and skidded loads.

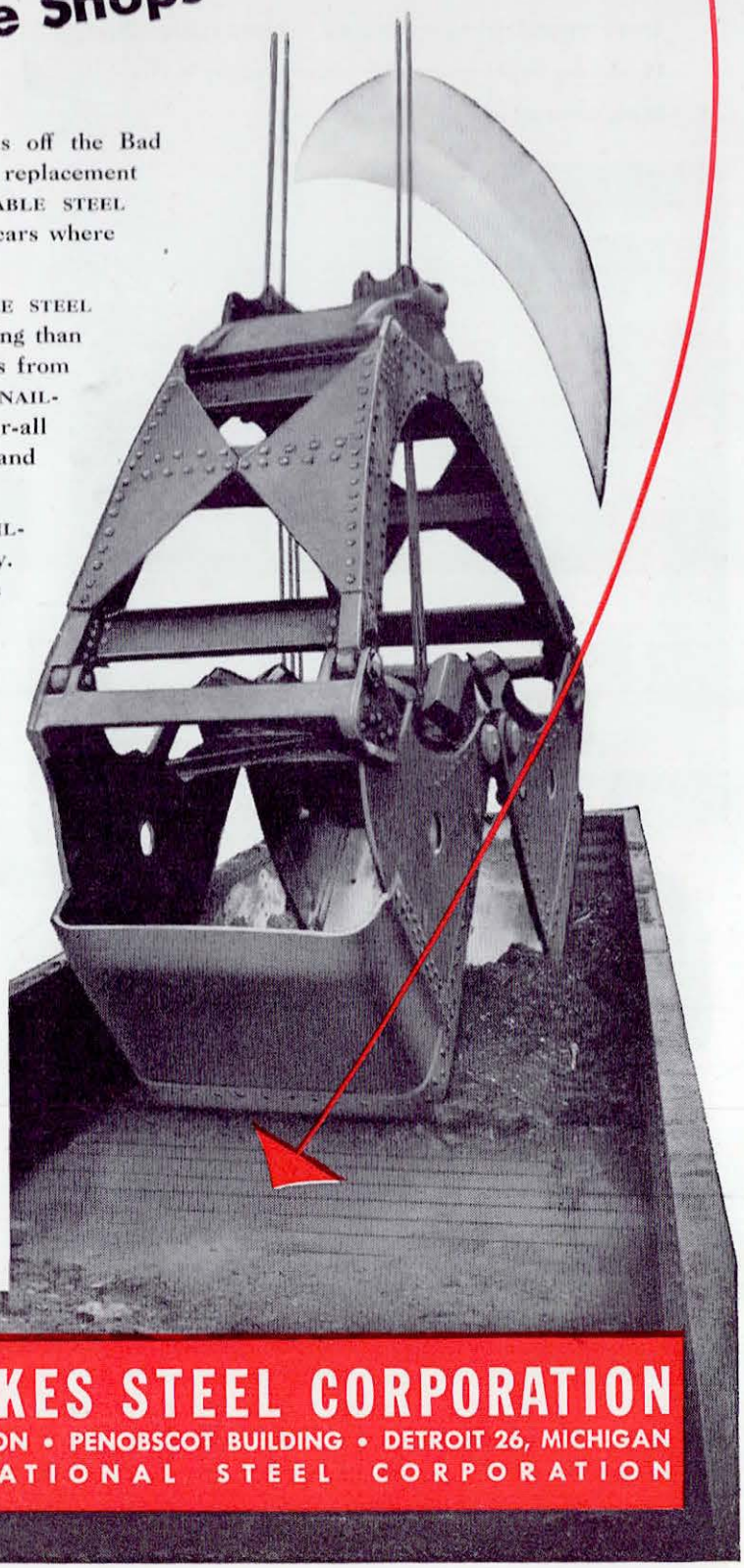
No Nail Damage—Nails can't rip or splinter NAILABLE STEEL FLOORING, can't damage it in *any* way. Held tighter than in wood, the proper size nails (20d or 30d in gondolas) are easily driven into the nailing grooves and can be readily removed.

High Rust Resistance—NAILABLE STEEL FLOORING is safer from rust because it's made from N-A-X HIGH-TENSILE steel which has three to five times the corrosion resistance of plain carbon steel and more than twice that of copper-bearing steel.

Combining nailability and strength, NAILABLE STEEL FLOORING does the job of both wood and conventional steel plate floors—and does each of them better. It saves money in operating as well as maintenance costs. When your next new car or rebuilding program comes up specify NAILABLE STEEL FLOORING.

NO TORN UP PLATES. This photograph shows gondola service at its roughest. Big clamshells like this ten-ton giant often tear rivet heads out of steel plate floors and rip up the cover plates. NAILABLE STEEL FLOORING *cannot* be torn up because it has no projecting rivet heads, no plate edges.

*PATENTS PENDING



NAILABLE STEEL FLOORING

A GREAT LAKES STEEL PRODUCT

GREAT LAKES STEEL CORPORATION

STEEL FLOOR DIVISION • PENOBSCOT BUILDING • DETROIT 26, MICHIGAN

UNIT OF NATIONAL STEEL CORPORATION

A "NATURAL" IN PUBLIC RELATIONS

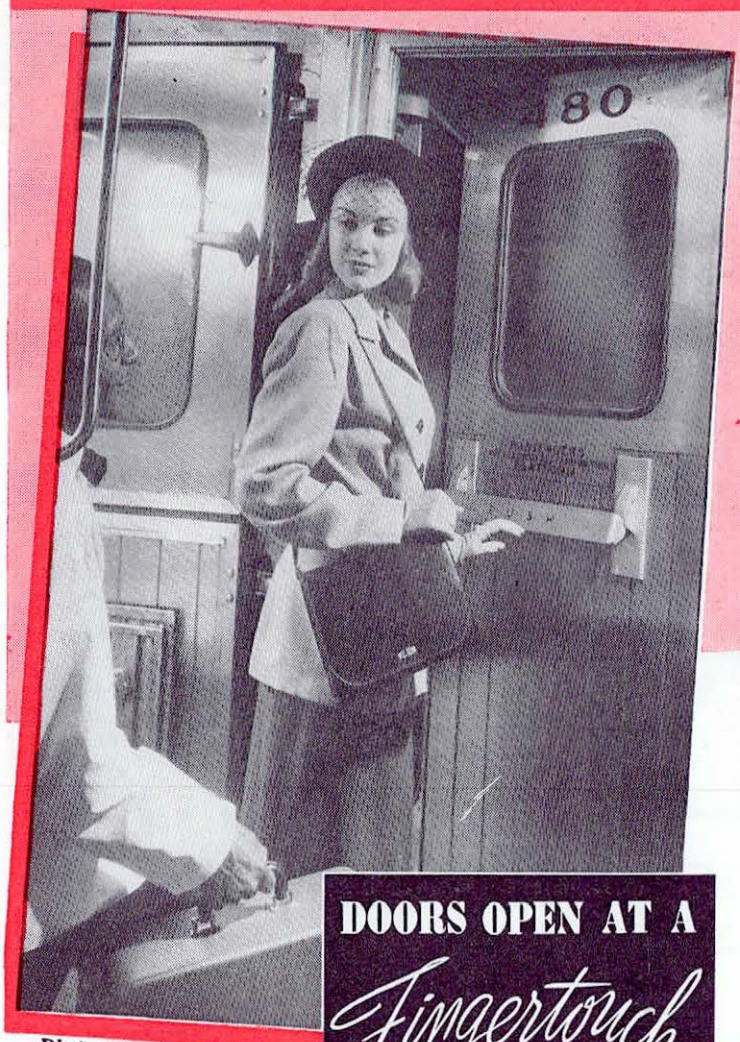


Photo Courtesy of
NEW YORK CENTRAL

DOORS OPEN AT A *Fingertouch*

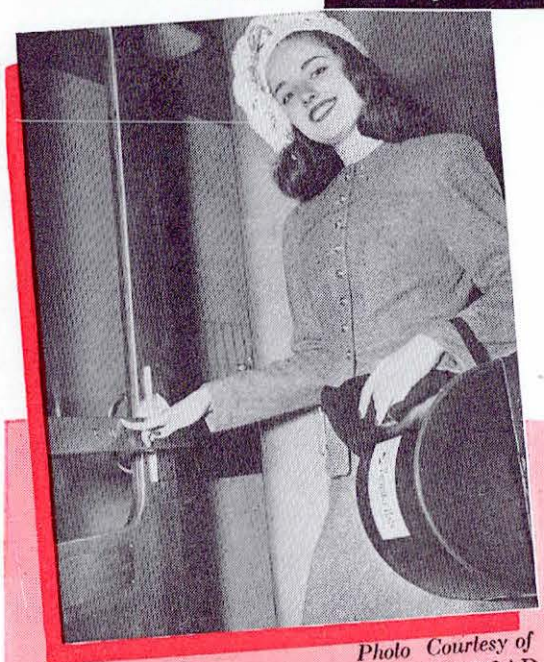


Photo Courtesy of
THE PENNSYLVANIA RAILROAD

NP

Automatic

END DOOR OPERATORS

● The popularity of N.P. Automatic End Door Operators with railroads and passengers alike, offers no impenetrable mystery. The answer is simply that observant railroad men recognize a perfect set-up for improving relations with their traveling public.

As for the passengers . . . they act as their own demonstrators—and love it. Few can resist the fascination of end doors that open magically at mere fingertip pressure. And all can remember past discomforts of struggling with stubborn door decidedly more convenient! Entirely safe, too.

So, leading railways serving the entire country are hastening to install N.P. Automatic End Door Operators for swinging or sliding end doors of their new passenger cars—and even on remodeled coaches where sufficient space above doors is avaiable for the door control mechanism.

Incidentally, the door action—including automatic closing—is timed to conserve conditioned air within the coaches. Publication No. 1063 tells the complete story. Write for copies.

NATIONAL PNEUMATIC COMPANY

GRAYBAR BLDG., NEW YORK • McCORMICK BLDG., CHICAGO
RAHWAY, NEW JERSEY

Distributed in Canada by Railway & Power Engineering Corp. Ltd., Toronto

WORLD'S LARGEST MANUFACTURER OF DOOR CONTROL EQUIPMENT FOR MASS TRANSPORTATION VEHICLES

NOW!

Spring Packing Corporation Offers . . .

EVERSEAL METALLIC PACKING

PATENT NO. 2084235

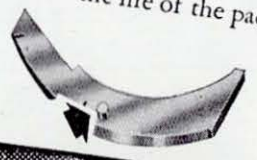
STOPS STEAM LEAKS
REDUCES ROD WEAR
CUTS MAINTENANCE COSTS
SLASHES PACKING EXPENSE

"Clears the View for Greater Safety"

The only new packing offered in years, Everseal Metallic Packing is ideal for locomotive piston rods, valve stems, boosters, stationary engines and other similar equipment. Patented construction gives uniform wear. Less spring compression means longer life. *You* save because rods need less frequent machining, and packing often lasts twice as long. Everseal Metallic Packing is largely interchangeable with other packing without replacing present parts assembly. For full information write *today!*

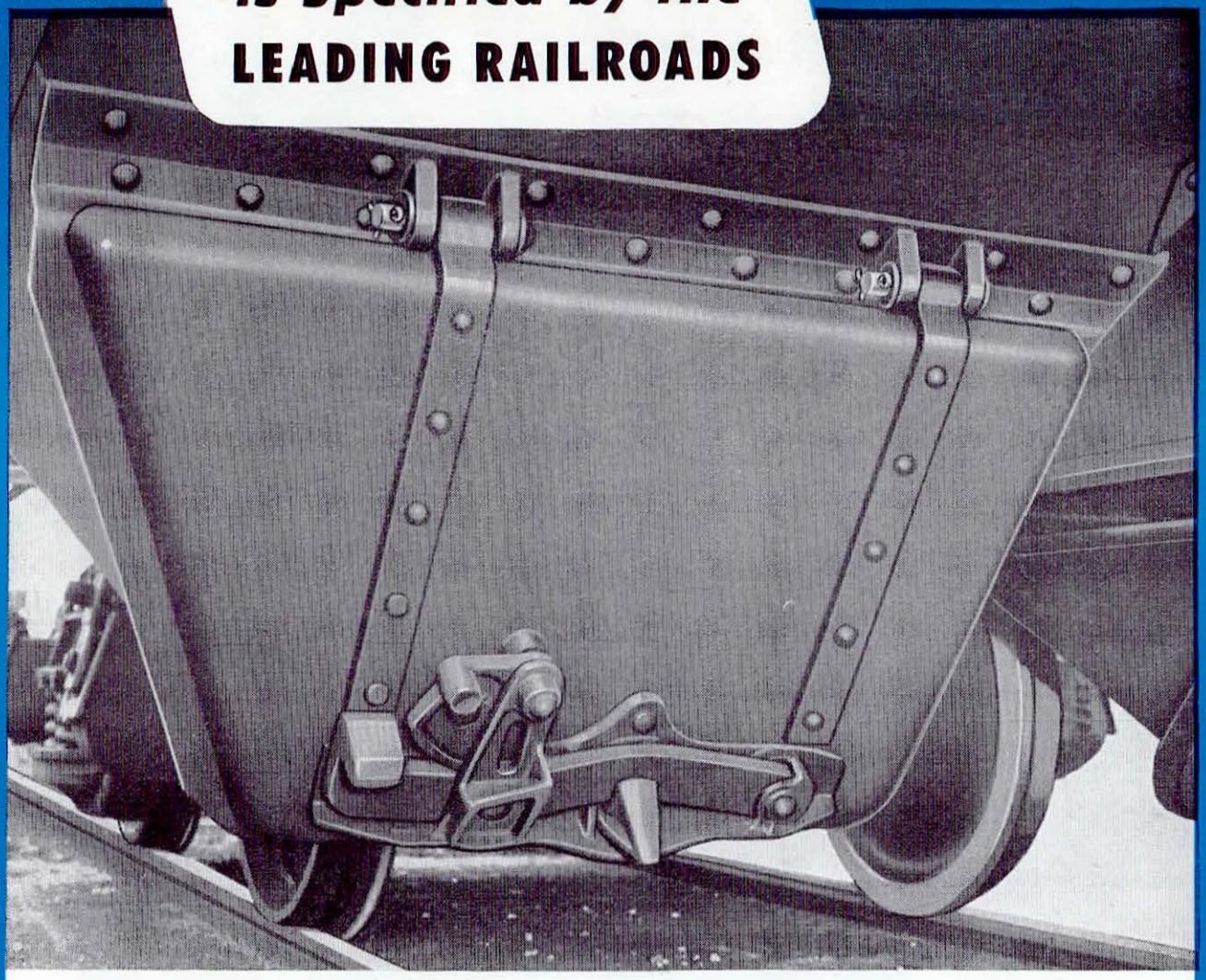
NEW Patented Construction

Six brass segments interlocked by three pins (see illustration) scientifically placed so that wear is uniform, is the secret of Everseal patented construction. This means *double* packing life, less frequent machining of rods, and peak efficiency throughout the life of the packing.



SPRING PACKING CORPORATION
122 SOUTH MICHIGAN AVENUE
CHICAGO 3, ILLINOIS

ENTERPRISE
is Specified by the LEADING RAILROADS



THE ENTERPRISE UNIT DOOR LATCH

For Hopper Cars

CHECK THESE ADVANTAGES

1. Rugged Construction—Will Last Life of Car
2. No Connecting Door Brace Required
3. Saves Weight and Reduces Car Parts
4. Tight Door Closure for Finest Ladings
5. Reduces Loss from Spill and Breakage

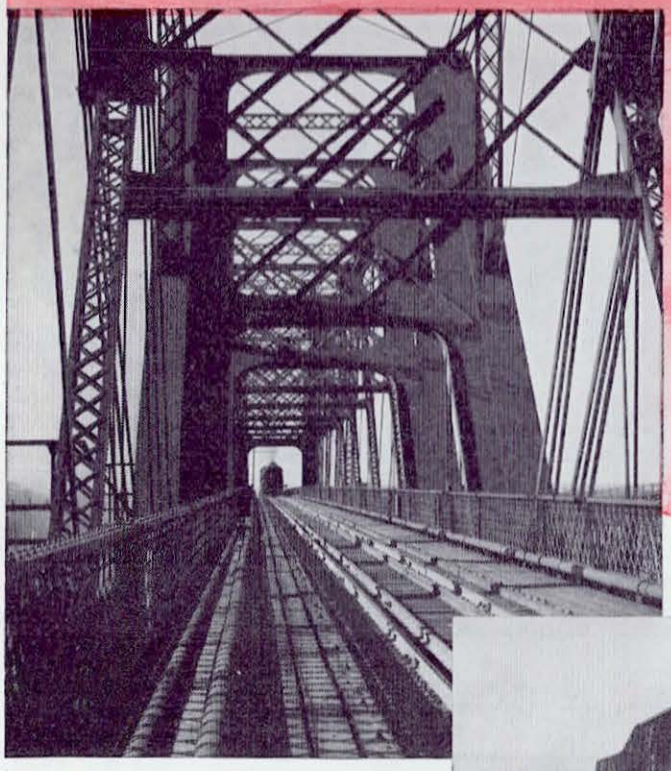
Unit Door Latches Have Been Specified Recently on Over 35,000 Hopper Cars

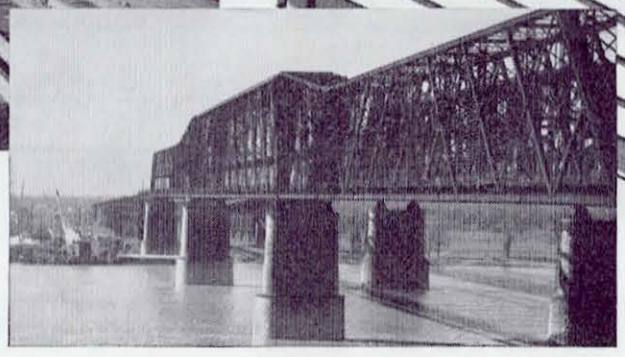
ENTERPRISE RAILWAY EQUIPMENT COMPANY

59 East Van Buren Street • Chicago 5, Illinois

Painted with PITTSBURGH IRONHIDE

6 years ago—and still looks good!





Two views of the Frisco Railroad's bridge at Memphis, Tenn., soon after it had been painted with Pittsburgh IRONHIDE.

Pittsburgh's tough, durable Railway Finishes are designed to safeguard costly properties against rust and corrosion

NO BETTER example of the toughness and durability of Pittsburgh Railway Finishes can be offered than the paint on the Frisco Railroad's bridge over the Mississippi River at Memphis, Tenn.

This structure was completely repainted with Pittsburgh IRONHIDE in 1942. For six years this finish has withstood rust and corrosion, industrial gases, oil, soot and other destructive agents. In cold weather as in hot it has adhered firmly to the metal surfaces it covers. It is this kind of performance that makes IRONHIDE ideal for the protection of railway bridges, towers, tanks, catenaries and other metal structures.

Write today for our booklet which lists Pittsburgh Railway Structural Maintenance Finishes and offers many practical suggestions for their efficient and economical use.

• • •

PITTSBURGH PLATE GLASS COMPANY
Industrial Paint Division, Pittsburgh, Pa.
Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Houston, Texas; Los Angeles, Calif.; Portland, Ore. Ditzler Color Division, Detroit, Mich. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Div., Cleveland, Ohio.

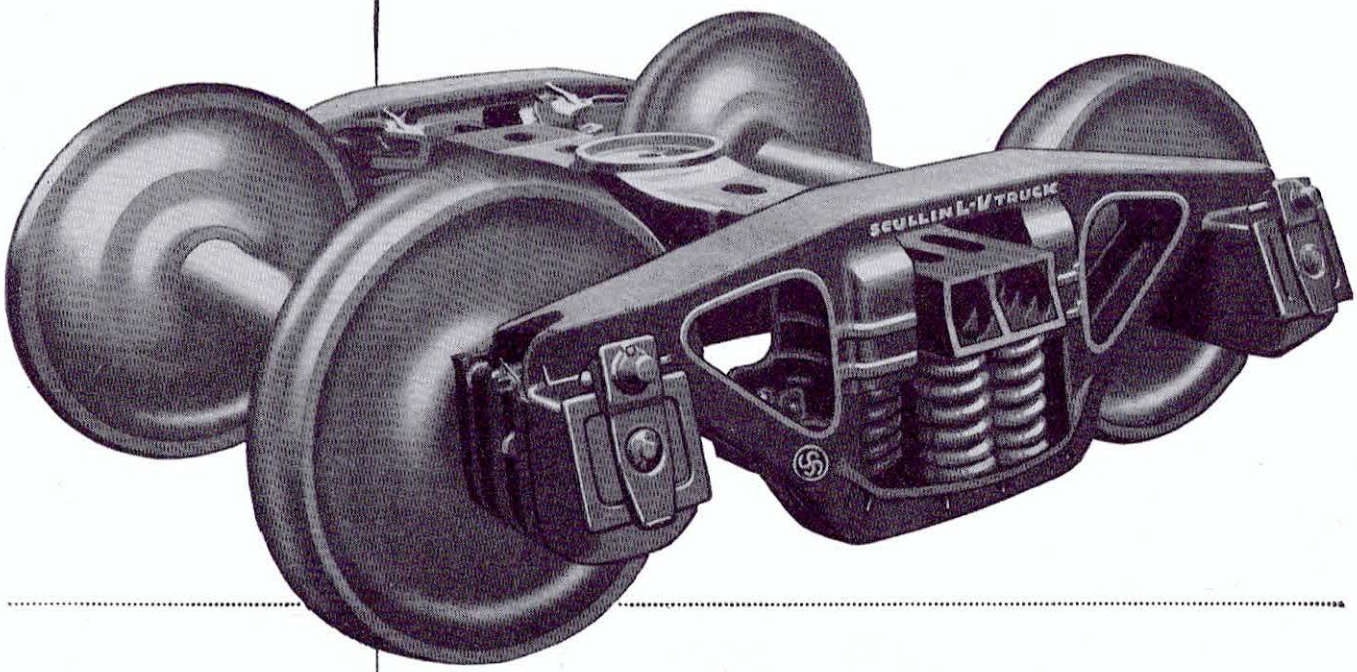
PITTSBURGH PAINTS

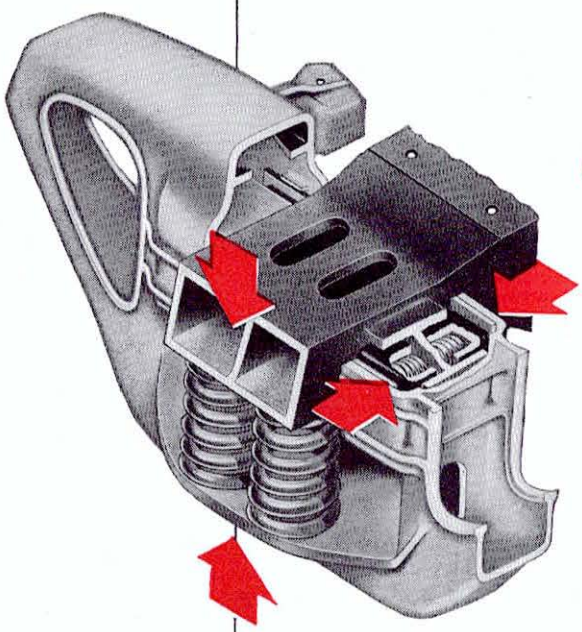
PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

THIS IS THE SCULLIN L-V TRUCK

LATERAL VERTICAL
L-V
CUSHIONED MOTION





AND THIS IS HOW

it completely cushions *both* lateral and vertical motion... makes high speed freight *safe* for lading, cars and track.

STEEL CASTING MANUFACTURERS • SINCE 1899 •

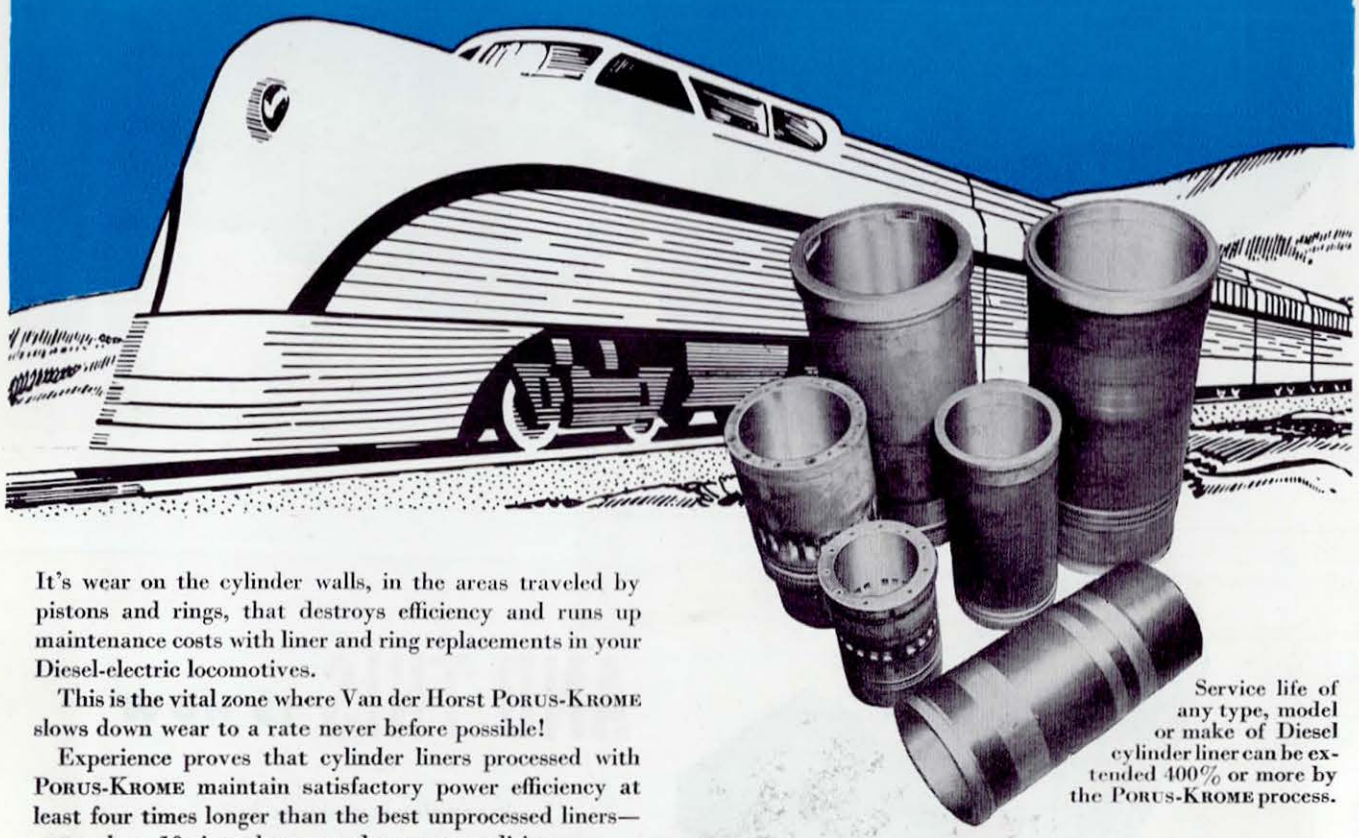
SCULLIN STEEL CO.

SAINT LOUIS 10, MISSOURI

NEW YORK • CHICAGO • CLEVELAND • BALTIMORE • RICHMOND, VA. • MEXICO CITY, D. F.

PORUS-KROME* saves wear

where wear costs most!



Service life of any type, model or make of Diesel cylinder liner can be extended 400% or more by the PORUS-KROME process.

It's wear on the cylinder walls, in the areas traveled by pistons and rings, that destroys efficiency and runs up maintenance costs with liner and ring replacements in your Diesel-electric locomotives.

This is the vital zone where Van der Horst PORUS-KROME slows down wear to a rate never before possible!

Experience proves that cylinder liners processed with PORUS-KROME maintain satisfactory power efficiency at least four times longer than the best unprocessed liners—as much as 10 times longer under some conditions.

Rings last longer, too, and damage from scuffing, scoring and piston seizure is eliminated or minimized. With less wear on rings and cylinder walls, oil consumption stays low much longer.

If the need arises, liners may be economically reprocessed and brought back to original bore. *You eliminate the extra stores expense of maintaining stocks of oversize liners, rings and pistons!*

When you buy either replacement liners or new Diesels, make sure of reduced maintenance costs and improved reliability—specify cylinder liners processed with Van der Horst PORUS-KROME. Write today for names of Diesel builders who furnish PORUS-KROME as standard equipment.

• • •

*PORUS-KROME is dense, hard, wear and corrosion-resistant chromium applied by the exclusive Van der Horst process which gives working surfaces an infinite number of tiny oil-retaining reservoirs for perfected lubrication.

VAN DER HORST CORPORATION OF AMERICA · OLEAN, N. Y.

PORUS - KROME

Good for the Life of your Engines

VAN DER HORST TRADE MARK

U.S. PATENTS 2,048,578, 2,314,604 AND 2,412,698

..SERVING..BY Saving

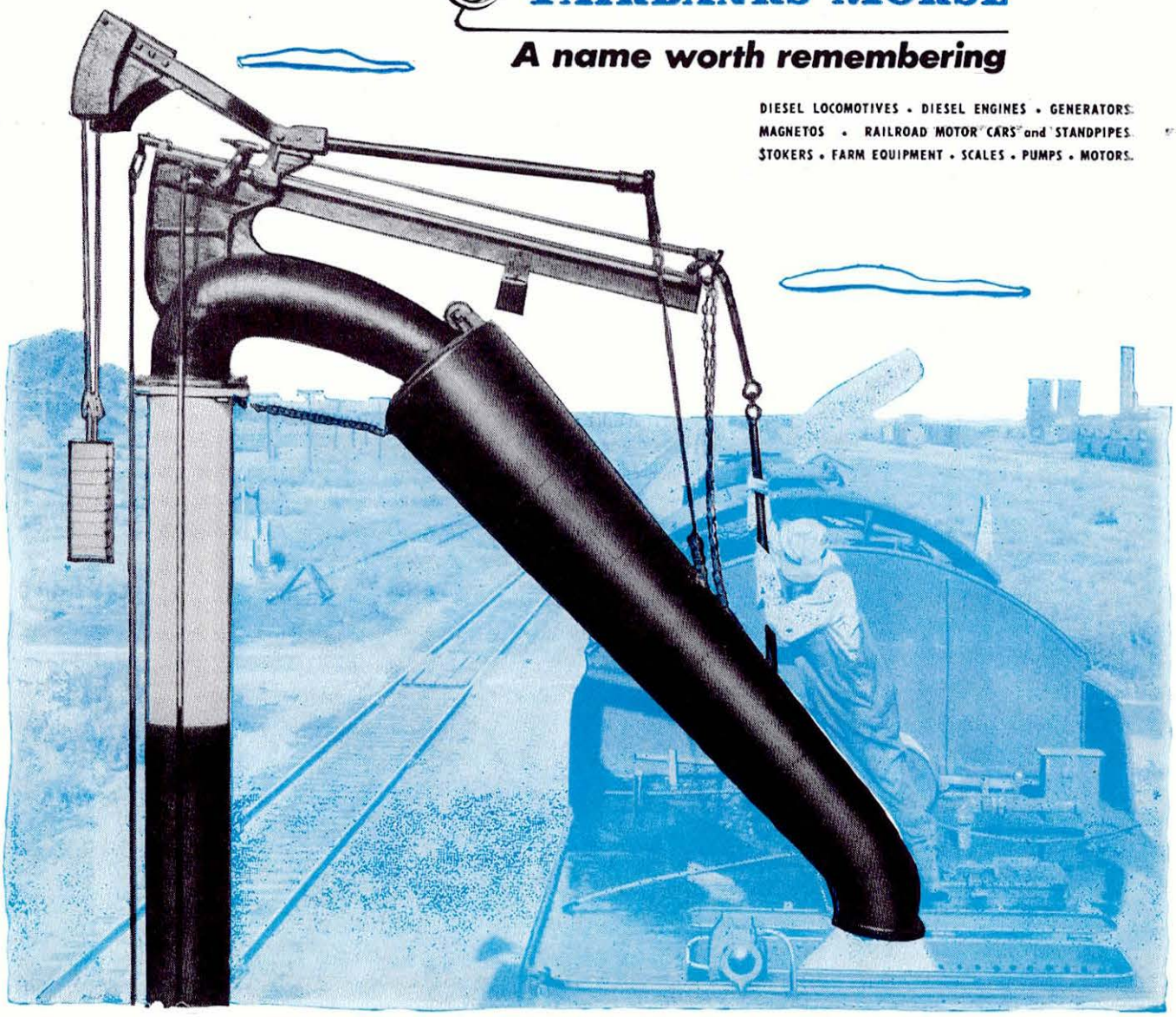
Fairbanks-Morse, today as in the past, is serving the railroads of the nation with a long line of railroad equipment designed and built by men who have "grown up with the roads"—equipment that saves time, manpower and maintenance dollars wherever it is used.

That's why Fairbanks-Morse is a primary source for oil and water standpipes, coal and sanding stations for diesel and steam locomotives, cinder conveyors, railroad scales, pumps, motor cars—and other primary equipment. Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE

A name worth remembering

DIESEL LOCOMOTIVES • DIESEL ENGINES • GENERATORS
MAGNETOS • RAILROAD MOTOR CARS and STANDPIPES
STOKERS • FARM EQUIPMENT • SCALES • PUMPS • MOTORS



THE *Editors* POINT THE WAY

TO THE TECHNIQUE OF SELLING TOP RAILWAY MANAGEMENT

THE railway men who *use* your product may be completely sold on its merits. But how about top management—the men who determine railway policies, who authorize and approve purchases? The *Railway Age* editorial at the left, directed to railway departmental officers, indicates to manufacturers that a consistent selling job must be done *in the management zone of buying influence.*

—And *Railway Age* can do that job for you!

For more than 90 years, leading railway supply manufacturers have found that *Railway Age* paves the way for their advertising messages through hard-hitting editorials and authoritative technical articles that top railway men *want, use* and *act* upon. *And at their own request* . . . for *Railway Age* is no "give-away" publication. Top management officers on practically every railroad *willingly pay* for an editorial service which they find professionally indispensable to them—a service on which *Railway Age,* through a staff of 24 editorial specialists, spends *over* $17.00 *per subscriber* annually, exclusive of mechanical costs.

If you want your advertising messages to travel with an editorial content that appeals to railway executives . . . if you want to sell them on your products—the logical choice is *Railway Age*—the *only* business paper devoted to top railway management.

The Technique of "Selling" Top Management

Departmental officers know only too well that their task in initiating a new project or new type of equipment or material is only half accomplished when they themselves have decided what ought to be done. The other, and usually the harder, half of the job consists in "selling" their top management on the merits of the proposal, both in itself and in comparison with other proposed expenditures.

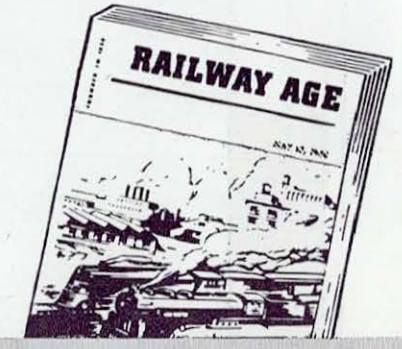
Departmental officers do not seem always to realize that presentation of the case for the improvements they know to be worth-while—in a manner easy for top management to understand—is a definite responsibility of theirs. Too often they become engrossed in the technicalities of their projects or operations, and leave to their managements the initiative in the major part of their planning.

When it happens that a department on a railroad does not receive what it considers to be its proper share of available funds for desirable improvements, it is easy enough to say that the top management is not alert or progressive—but, frequently, it would be nearer the truth to say instead that the department concerned has been insufficiently skillful and energetic in drawing attention to the merits of its wares.

Sometimes, though, even flawless presentations through the usual channels are insufficiently convincing. Some recent experiences indicate that, where feasible, a practical demonstration in the field provides an effective supplementary aid. In one instance, the management of a large road was completely won to the approval of a large and long-neglected program of passenger station redecoration and modernization by a detailed field inspection of these stations. In another, getting a few general officers to witness some ...ck surfacing operations resulted in the ...n expenditure of more than $200,000 for ... of additional machines of the type

...nother case, while witnessing a demon... modern mechanized crib-cleaning operations, ... of the road was heard to say that, from now on, there will be no more general track raising and surfac... on our ...in lines that is not accompanied ... the tie cribs."

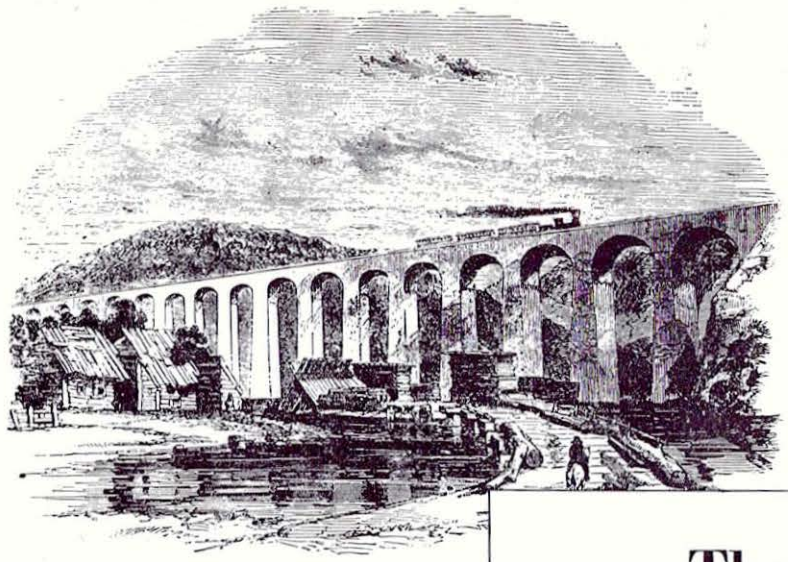
Reprinted from an editorial in Railway Age



RAILWAY AGE

(Founded in 1856)

SIMMONS-BOARDMAN PUBLICATIONS



The Great BROAD GAUGE ROUTE

ERIE

NOT the first, but the longest—and the widest. Such was the proud boast of the Erie when, on May 14, 1851, it carried a distinguished group of passengers including the President of the United States on the first long distance railroad journey made in this country. Other railroads preceded it in time, but only one—in Russia—was longer. And none, certainly, was wider, for the Erie's six foot gauge was deliberately adopted to prevent connection with any other line.

That first 427 mile trip celebrating the completion of the line from Piermont to Dunkirk made history. At Elmira and other places enthusiastic speeches were made to local people assembled to meet the trains. A few of these orations were by Daniel Webster who anticipated the vista dome car by anchoring his rocking chair to a flat car in order not to miss any of the scenery.

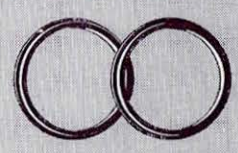
Today, nearly a hundred years after that linking of the Hudson with the Lakes, the twenty-three hundred miles of Erie tracks between New York and Chicago comprises one of America's greater transportation systems.

Edgewater

Serving America's Railroads

RING SPRING DRAFT GEARS

ROLLED STEEL WHEELS



LOCOMOTIVE TIRES

EDGEWATER STEEL COMPANY • PITTSBURGH, PA.

A nice job of providing service

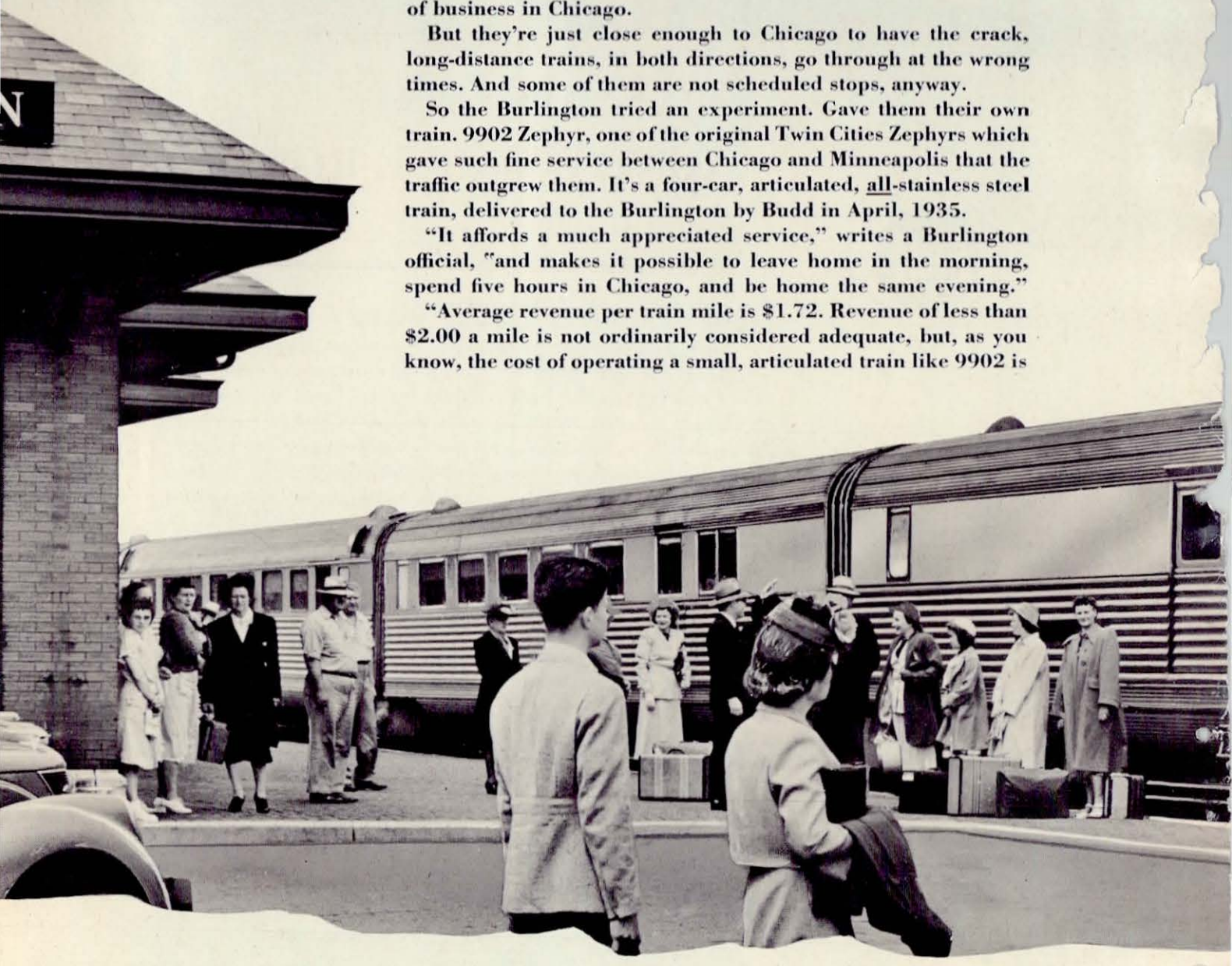
Galesburg, Keokuk, Mendota, Princeton, Kewanee and Monmouth are typical of the smaller cities on the Burlington's right-of-way in Illinois, Iowa and Missouri. People who live in them do a lot of business in Chicago.

But they're just close enough to Chicago to have the crack, long-distance trains, in both directions, go through at the wrong times. And some of them are not scheduled stops, anyway.

So the Burlington tried an experiment. Gave them their own train. 9902 Zephyr, one of the original Twin Cities Zephyrs which gave such fine service between Chicago and Minneapolis that the traffic outgrew them. It's a four-car, articulated, all-stainless steel train, delivered to the Burlington by Budd in April, 1935.

"It affords a much appreciated service," writes a Burlington official, "and makes it possible to leave home in the morning, spend five hours in Chicago, and be home the same evening."

"Average revenue per train mile is $1.72. Revenue of less than $2.00 a mile is not ordinarily considered adequate, but, as you know, the cost of operating a small, articulated train like 9902 is



relatively low and, in the opinion of the officers, the train is making a comfortable margin over actual out-of-pocket operating costs."

It is the enduring quality Budd builds into all-stainless steel cars that keeps operating expenses low enough to earn a profit on small revenues with a train that has already seen years of high-speed service. No painting. No corrosion. No deterioration. Mechanically 9902 is as good as the day it was built. The Budd Company, Philadelphia 32.

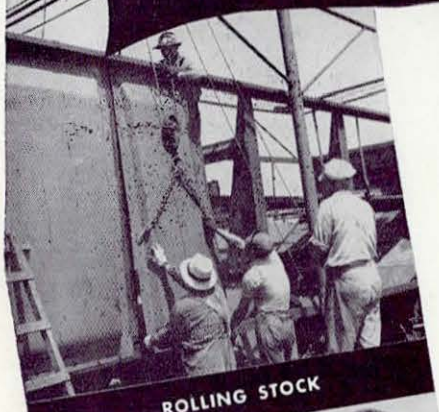
-AT A PROFIT

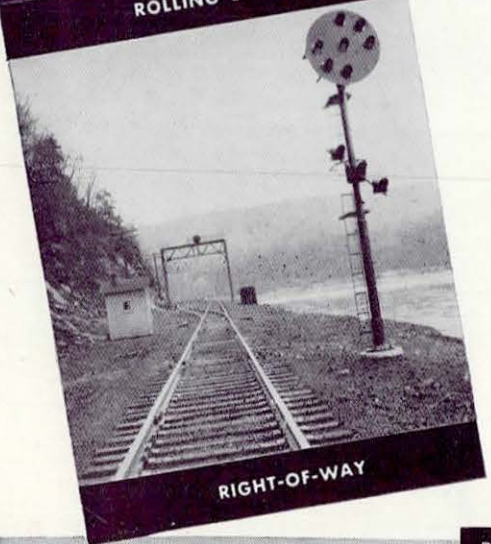
Budd

make extra **NET PROFITS** *out of rust losses!*

RUST-OLEUM STOPS RUST

APPLY BY BRUSH, DIP OR SPRAY


ROLLING STOCK


RIGHT-OF-WAY

You Save on Maintenance Costs!

Keep cars rolling years longer . . . Provide essential protection to right-of-way equipment, bridges, buildings and other properties. Rust-Oleum coats metal . . . and dries firm—with a tough, *water-tight,* enduring film that prevents rust by moisture, fumes, acids, heat and many other destructive elements.

Rust-Oleum can be applied directly to any rusting surface—after easy, time-saving preparation. *It outlasts ordinary materials two to ten times,* depending on conditions. For lasting satisfaction and extra profits specify Rust-Oleum on new and re-built cars . . . and out on the right-of-way where rust is costly.

Write for full information TODAY. Ask for Catalog No. 145.

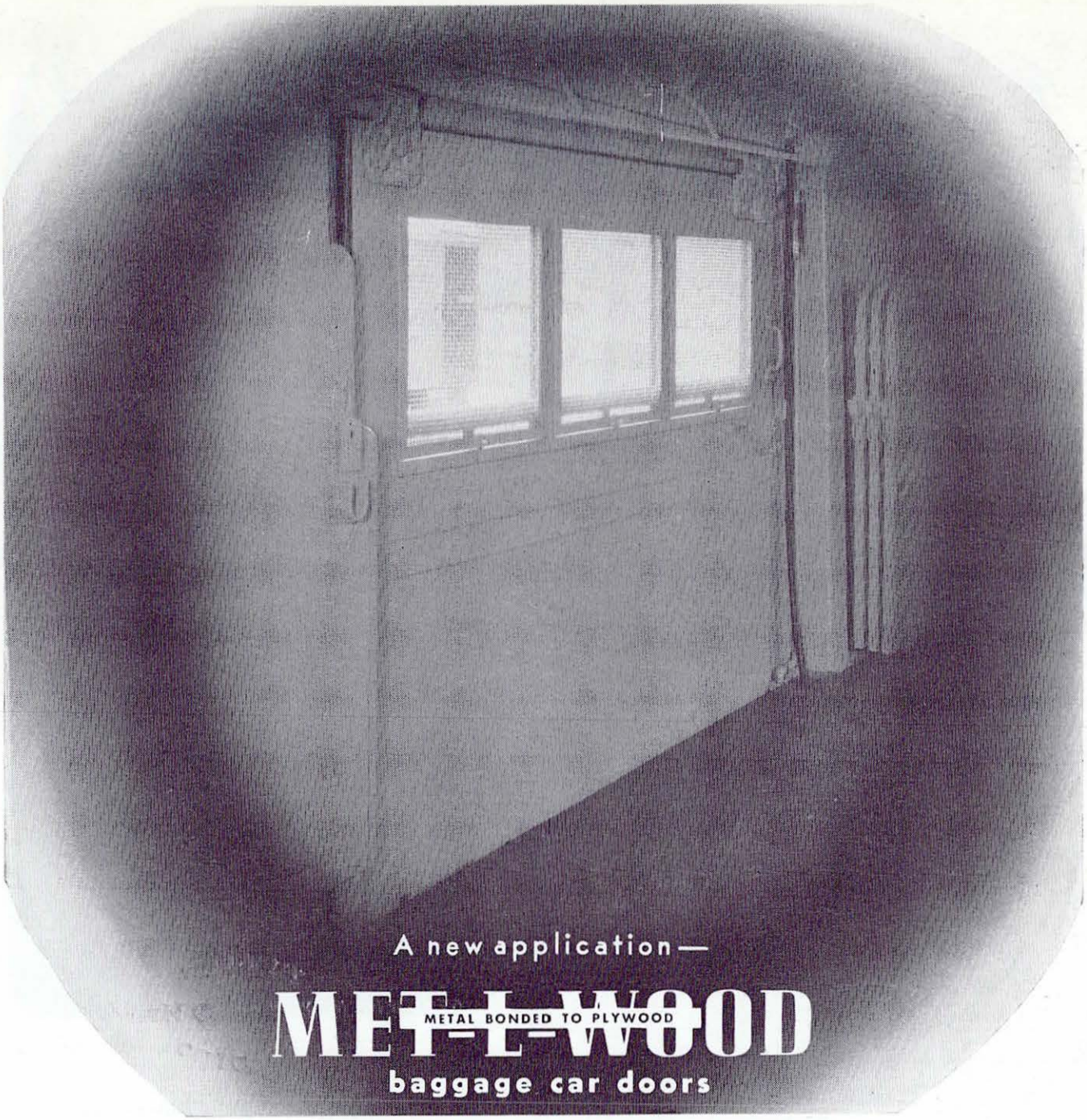
HERE'S HOW RUST-OLEUM SAVES TIME AND MONEY:

IT GOES ON FASTER
Rust-Oleum saves 25% of the time normally required for application . . . and covers up to 30% more area.

IT CUTS PREPARATION
No sandlasting, flame cleaning or chemical rust "dissolvers" are required. Merely wirebrush to remove scale, dirt, etc. and apply RUST-OLEUM.

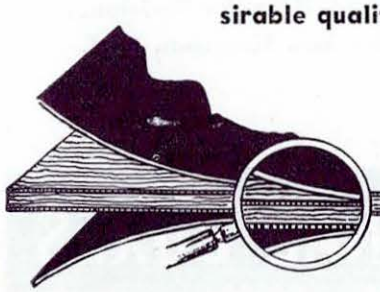
IT PROTECTS LONGER
Rust-Oleum LASTS two to ten times longer than ordinary materials on most jobs. Every application gives maximum protection.

RUST-OLEUM CORPORATION
2415 OAKTON STREET EVANSTON, ILLINOIS



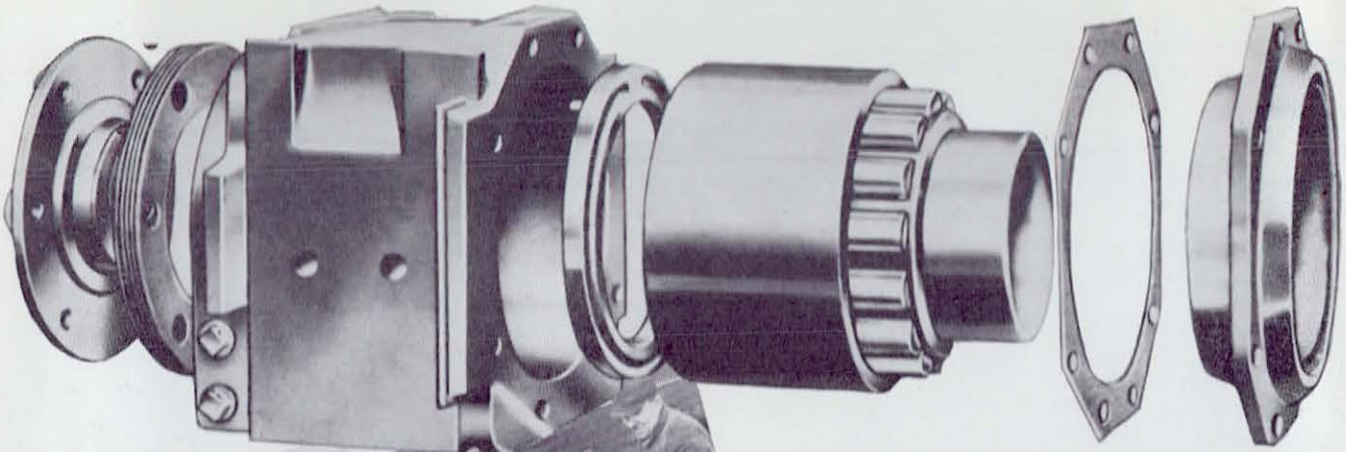
Saves weight . . . promotes ease of operation . . . gives added durability . . . increases life of hardware . . . simplifies installation . . . for new and modernized cars . . . preformed and fabricated to your designs and specifications.

Consider this remarkable material when you order new cars or plan a modernization program. Our engineering staff will gladly help you to make the most advantageous use of MET-L-WOOD's many desirable qualities.



MET-L-WOOD CORPORATION

6755 West 65th Street, Chicago 38, Illinois



Exploded view of a Hyatt Roller Bearing Journal Box showing the practical, rugged simplicity of its component parts.

Railroad workmen removing a Hyatt Roller Bearing Journal Box from a car journal by hand. No special tools are necessary.

For a quick inspection or complete overhaul "it's easier with Hyatts"

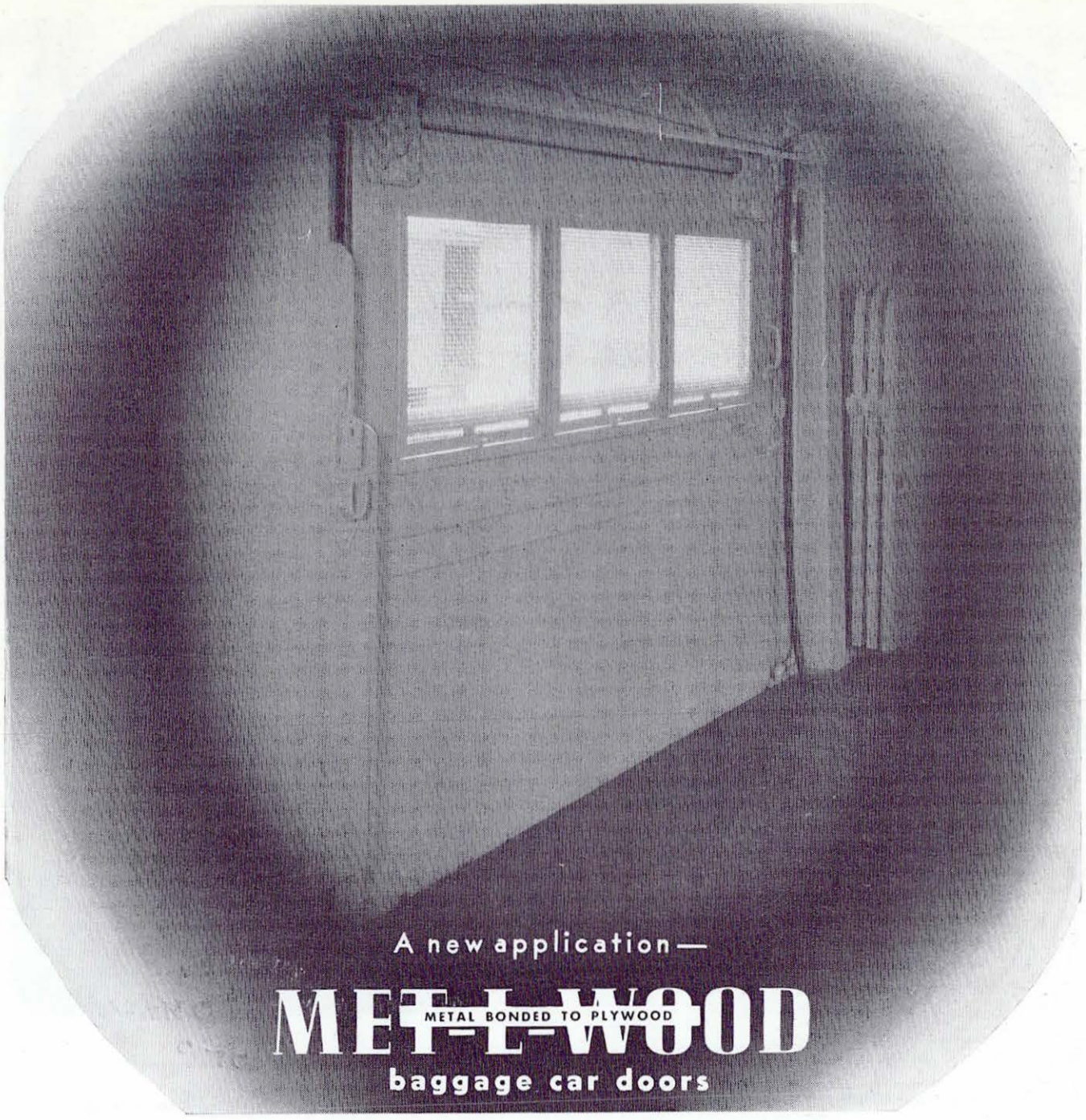
To keep your journal box maintenance costs to a minimum, specify Hyatt Journal Boxes. They are designed to make your maintenance job easier. They are constructed so that you can remove them from car journals by hand. Once removed they can be inspected easily and immediately reapplied to spare axle sets equipped with Hyatt inner races.

When more complete cleaning and inspection is desired, Hyatt Journal Boxes and Bearings can be quickly and completely dismantled right down to the individual rollers. No special tools are required.

Whether it's regular preventative maintenance or a complete inspection – shop men know that "It's easier with Hyatts."

For additional reasons why "It's easier with Hyatts" write for our Passenger Car Maintenance Film Booklet. Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.

HYATT ROLLER BEARING JOURNAL BOXES



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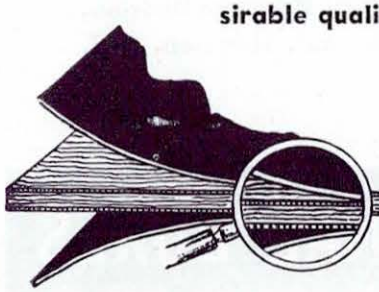

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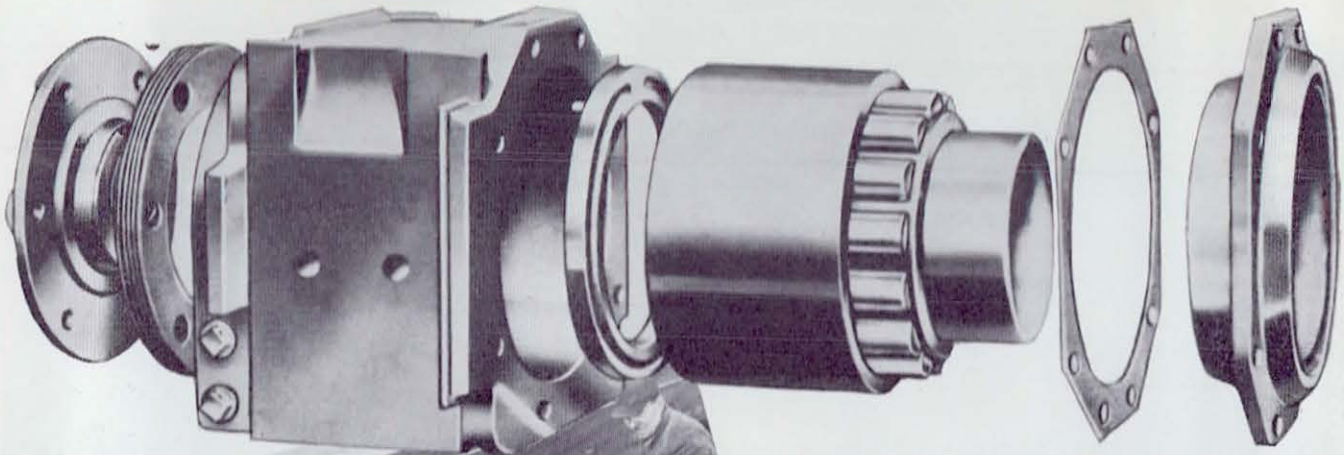

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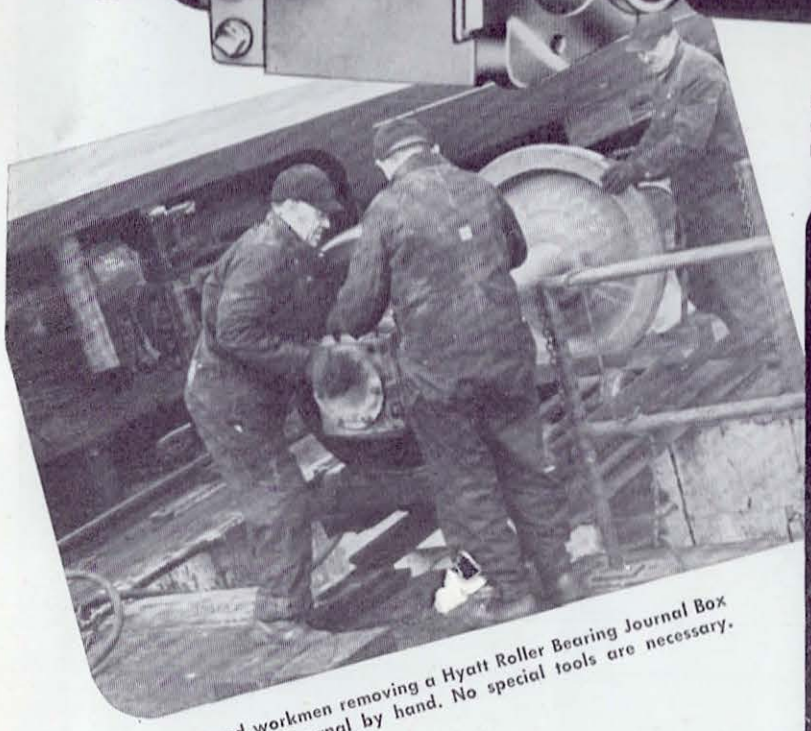

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HYATT ROLLER BEARING JOURNAL BOXES

Vol. 125, No. 12 September 18, 1948

RAILWAY AGE

With which are incorporated the Railway Review, the Railway Gazette, and the Railway-Age Gazette. Name Registered in U. S. Patent Office.

IN THIS ISSUE

EDITORIALS:

Railway Union Leaders and the "Commies" 49

Being Unnecessarily Different Costs Money 50

More Pennies from Commuters 50

Associations' Value to Railroads 51

Research Is No One-Department Job 51

COMMUNICATION 61

GENERAL NEWS 73

FREIGHT OPERATING STATISTICS 86

REVENUES AND EXPENSES 88

CURRENT PUBLICATIONS 95

GENERAL ARTICLES:

Diners and Grill Cars for the "Eagles" 52

One Hundred Years' Development of Railways in the Chicago Area, Part II, by Samuel O. Dunn 58

Chicago Being Ringed with Welded Rail 62

Can the Railroads Be Adequately Financed by Private Investors? by Dr. C. S. Duncan 66

New "Century" Inaugurated by New York Central ... 70

New and Improved Products of the Manufacturers .. 72

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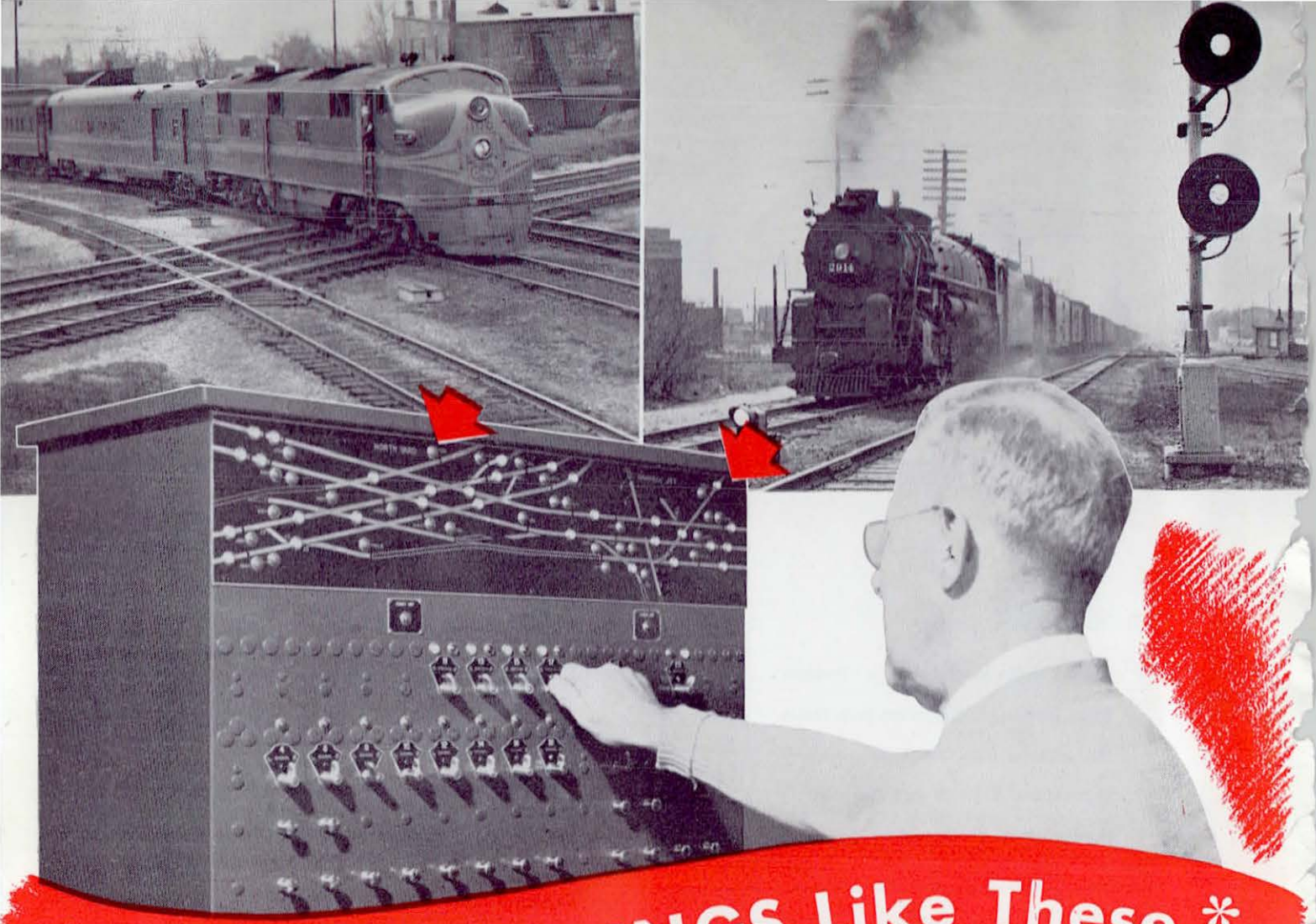

Profit With SAVINGS Like These *

Recently the C. & E. I. installed a new "Union" Unit-Lever Relay Interlocking at Danville, Ill., where its main line crosses a main line of the Wabash. The interlocking eliminates *55,000 train stops annually* . . . produces savings like these:

*From articles appearing in *Railway Age,* Feb. 21, 1948, and Railway Signaling, Dec., 1947.

On the C. & E. I.

Saves 3 minutes by elimination of each passenger train stop.

Saves 10 minutes by elimination of each freight train stop.

On the Wabash

Saves 10 minutes and ½ ton of coal by elimination of each eastbound passenger train stop.

Saves 20 minutes and 2 tons of coal by elimination of each eastbound freight train stop.

Saves 8 minutes and ½ ton of coal by elimination of each westbound passenger train stop.

Saves 10 minutes and 1 ton of coal by elimination of each westbound freight train stop.

Such interlockings quickly pay for themselves. So why don't you look over your railroad . . . see if there aren't strategic points where you can effect similar savings?

UNION SWITCH & SIGNAL COMPANY

SWISSVALE PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

WEEK AT A GLANCE

CALL FOR INDEPENDENCE: The research activities of many railroads are carried on largely within the mechanical department's organization. One of our editorials questions the efficiency and justice of this arrangement under today's conditions, when research needs to be done, not just for the mechanical department but for all departments. Isn't research important enough to stand on its own feet?

GRAND JUNCTION: The story of Chicago's development as the world's greatest railroad center, begun in our last issue, is continued herein (page 58). The immense investment of the taxpaying railroads in the facilities concentrated there has created a unique combination of trunk lines radiating in all landward directions, belt lines effectively linking these trunk lines for the interchange of vast volumes of freight, terminals highly developed for handling specific commodities, services that simplify the movement of "commuters" between midtown office and suburban home, and passenger stations convenient to the city's heart.

RAILROAD NEEDS AND PUBLIC INTEREST: James G. Lyne, co-editor of *Railway Age,* has recently had published a doctor's thesis, translating into terms of public interest in efficient transportation the need of the railroads for additional fixed-plant capital. This thesis is carefully reviewed by Dr. C. S. Duncan, economist of the Association of American Railroads, in the article on page 66.

RAILS 2.42 MILES LONG: When the Elgin, Joliet & Eastern completes this year's rail renewal program it will have almost 41 miles of continuous welded rail in main-track service, in lengths running up to 12,782 feet. One of our illustrated articles reviews the procedure by which these long rails are produced from standard 39-ft. lengths, transported from the welding plant to the point of installation on a train of 43 specially equipped flat cars, and unloaded and placed by a locomotive crane.

BREAKERS AHEAD?: One of our news stories this week reviews at some length a report emanating from the Department of Commerce which undertakes to analyze and compare the movement of freight by rail and by highway. Although the inadequacy of data concerning truck operations makes the report "admittedly incomplete," enough figures have been assembled to indicate that the truckers not only are having better luck than the railroads in getting new equipment, but also have succeeded in obtaining an increasing percentage of new tonnage that otherwise would make considerable long-haul and carload business for the railroads. The full report is interesting, if not very cheerful, reading for all railway executives and traffic officers. And it should be compulsory reading for the brothers, who might learn from it that their present and future welfare is not solely a matter of pay increases, featherbedding and government ownership ballyhoo.

NEW "CENTURY": The New York Central's postwar passenger equipment replacement program included new cars for the "Twentieth Century," and this week they made their inaugural runs, after appropriate ceremonies. This issue includes illustrations showing some of the accommodations and appointments which the railroad's staff and Pullman-Standard have cooperated to provide. Among them are an elevated-floor observation lounge, unusually spacious kitchen and dormitory arrangements, a full-car diner, and roomettes and bedrooms in various combinations.

PLAYING INTO THE ENEMY'S HANDS: When the actions of the brotherhoods' chiefs are analyzed in the light of the principles to which they profess allegiance, peculiar and discouraging deviations stand out conspicuously. They profess belief in democracy, but they adopt resolutions in favor of the totalitarian device of government ownership. They profess antagonism to communism, but they resort to egregious falsifications of the record of enterprises operating under capitalism in an attempt to discredit those enterprises —the railroads especially. Our leading editorial elaborates upon these inconsistencies, arriving at the conclusion that in thus resorting to the tactics of communism and advocating the policies of communism these self-serving union leaders are materially weakening the defenses of our political and economic system against those who would overthrow it.

YOUR SLIP IS SHOWING: A beautiful example of the muddled inconsistency typical of bureaucratic thinking on transportation matters (among others) is revealed in our news story this week of the Civil Aeronautics Board's action on air freight forwarder applications. The board authorizes operation by a heterogeneous collection of 55 "pure" would-be forwarders, but denies similar authority to two applicants that are contaminated by railroad control, basing the denial on the to-be-expected conclusion that such control *might* prove "detrimental." The board appears to consider "detrimental" synonymous with "efficient," since it suggests that the probability that the railroad-controlled firms would give shippers better service than those whom it favors with its approval is its principal reason for forbidding their operation.

"EAGLE" DINING FACILITIES: One of our illustrated articles (page 52) describes the seating arrangements, decorative treatment and equipment characterizing the 44-seat dining cars, the diner lounges (which seat 32 in the dining room and 18 in the lounge), the lounge-grill coaches and the grill coaches which A.C.F. has delivered to the Missouri Pacific and Texas & Pacific for these roads' "Eagle" streamliners.

WHEREVER THEY SERVE— LOOK FOR **LONG LIFE**

In today's many-sided industrial picture . . . with today's installation costs, only the longest-lived wires and cables are economical. Okonite wires and cables, built to stand up better and longer, offset high installation costs.

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RAILWAY AGE

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RAILWAY UNION LEADERS AND THE "COMMIES"

Just why many leaders of labor should pretend violent opposition to communism and at the same time imitate the methods of the communists and advocate many of the same specific policies seems not entirely certain. Apparently their antagonism to the communists is principally due to their desire to retain the positions of leadership and control in the labor unions which the communists so perseveringly try to take from them.

"—*But Liars Do Figure*"

The most characteristic feature of communistic propaganda is the lying of which it so largely consists about how the earnings of private enterprise are divided between employees and owners. "Labor" is a weekly publication owned by the railway labor unions and distributed to their members from Washington. "Labor" in a recent article published figures purporting to show "that among several hundred corporations . . . wage and salary payments amounted to only 24.6 per cent of gross earnings in 1947 compared with 37.5 per cent in the previous year." What was the purpose in disseminating these figures among employees of *railways* unless to deceive them? The wage and salary payments of the Class I railroads in 1946 and 1947 were the highest percentages of their gross earnings ever known (excepting in 1918, 1919 and 1920, owing to government operation) since complete railway statistics have been compiled—having been 52.1 per cent in 1946 and 47.6 in 1947.

In the same article "Labor" quoted a recent editorial in which *Railway Age* urged railway managements to refuse in future to make any agreement for arbitration, or to accept any recommendation of a fact-finding board appointed by the President, if it would result in another advance in wages, before another advance in rates, and in a consequent reduction in present net operating income. "Labor" called this "getting tough" . . . "in the face of the fact that rail profits are so high their stocks are 'leading the market on the exchange.'" As *Railway Age* pointed out in the editorial to which "Labor" referred, the railways earned an average of only $700 million net operating income annually in the first three years after the recent war as compared with an average of $1,017 million in the decade ending with 1930. Their stocks "led the market" by selling on September 1, 1948, as reported by Dow-Jones, at an average of $62.67 as compared with an average for industrial stocks of $183.60.

As "Labor" is owned and published by the rail-

way labor unions the leaders of these unions are entirely responsible for its imitation of the communist press in disseminating wholly misleading and even false statements. As to "getting tough"—if the railways rejected arbitration or the recommendations of a Presidential fact-finding board they would only do what the labor leaders have done many times without revealing any doubt as to their right to do so.

In addition to imitating the communists by falsifying the record of private enterprise, the leaders of the railway labor unions do not hesitate to advocate communist policies when they do not immediately get what they demand. The Railway Labor Executives Association, composed of the heads of the unions, at a meeting in Washington on May 25, 1948, adopted a resolution demanding "that the government, moved by the present demonstration of the inability of railroad management to maintain satisfactory labor relations and conditions . . . as well as other failures of railroad management . . . begin preparations for the transfer of railroad ownership from private interests to the United States of America."

A Basic Tenet of Socialism

Government ownership of property is the policy of both socialism and communism. The only apparent difference between socialists and communists is that the former usually advocate the establishment of government ownership by democratic means while the communists advocate its establishment by force and violence. Experience has shown, however, that socialism inevitably leads toward autocracy in government, because government soon finds that under socialism it can establish any semblance of efficiency in management only by the use of force.

The leaders as well as the members of the railway labor unions desire to have you think they are good citizens who believe in what is called "the American way of life." How the leaders can reconcile this opinion of themselves with the responsibility they assume for the constant dissemination of lies among the members of the unions, and with their adoption last May of the resolution for government ownership of railways, which in this country would make complete socialism almost unavoidable, is impossible to understand.

The principal thing the communists are working for as a means of spreading communism throughout the world is the breakdown of the private enterprise system of the United States. They have no better helpers than labor leaders who, while professing hatred of communism, employ the communist tactics of misrepresenting private enterprise and its results and advocating such socialist and communist policies as government ownership of railways.

BEING UNNECESSARILY DIFFERENT COSTS MONEY

At their recent meeting in Chicago, members of the Purchases & Stores Division of the Association of American Railroads reported their efforts to save money for the railroads by standardizing items for purchase. Standardization makes possible quantity buying with its attendant savings, thus cutting the amount of money tied up in stores stock. Also, by decreasing the number of items carried, it makes easier and less costly the storekeeper's job. There are, frequently, valid reasons for difference in specifications for common items—and, where such reasons exist, they must take precedence over the desire for standardization—but some variations are less soundly based.

F. J. Steinberger, assistant general purchasing agent of the Santa Fe, told how, in the case of tie plates, failure of the railroads to standardize punchings had led the steel industry to do it for them. Deviations from the standard will cost the purchaser 2½ cents extra per deviation, which could run, the speaker said, as high as $8 per ton. Mr. Steinberger went on to cite the case of baggage trucks, where the differences in wheel diameters and widths frequently were too infinitesimal to have much reason to justify them. Such variations cost the purchaser "extra" and result in extended delivery times.

Since the purchasing and stores department generally only handles these products, and does not use them, it cannot alone carry out successfully a program of standardization. The cooperation of the using departments is necessary if any real good is to be accomplished in this fertile field. The suggestion of Mr. Steinberger that the Mechanical and Engineering Divisions join with P. & S. in its effort to simplify and standardize sounds mighty sensible.

MORE PENNIES FROM COMMUTERS

A source of additional revenue from the operation of commuter train service seems possible through establishment of minimum rates at least equal to local transit fares. Rates for single trips on city bus and street car lines in many places have been increased, percentagewise, to a much greater extent than steam railroad fares in the same territory. In the Chicago area, for example, some multi-ride tickets still give commutation passengers a rate per ride as low as six-and-a-fraction cents,

while surface-line transit fares have risen to 13 cents, and elevated fares to 15 cents.

The state commissions would have little basis for refusing the railroads the right to establish minimum commutation fares which would give the passengers a per-ride rate the same as that charged by the local traction lines, and it is unlikely that a par fare would drive away any patronage now favoring the railroad. Such rates should give the railroads some increased earnings on service already provided, without occasioning added expense.

ASSOCIATIONS' VALUE TO RAILROADS

To what extent have the activities and studies of associations of railway officers been adapted to the changes in the urgency and importance of the problems confronting the railroads? This question is especially significant at the moment because, during the week of September 20, seven associations of railway officers will be holding conventions at Chicago, including the Roadmasters' and Maintenance of Way Association and the American Railway Bridge and Building Association. Assuming these two groups to be representative of all such associations, an examination of their convention programs should help answer the question as to the timeliness of association activities and studies.

On the Roadmasters' program there are to be six committee reports, of which one will deal with the education of track employees in the cost of materials, tools and equipment; another will treat the use of maintenance-of-way work equipment at derailments and in coping with other emergencies; a third deals with the operation of power and spring switches during winter storms; and a fourth will have to do with ways and means of reducing rail joint maintenance. Every one of these reports is an attack on a problem directly related to the betterment of railway operations or to cost reduction, and all are timely. The other two reports, equally useful, encompass studies of modern methods of controlling vegetation and of trends in the functions and responsibilities of section gangs.

The Bridge and Building Association is also guided by the weather vane of modern trends, as is shown especially by two of its committee reports, one on the enlargement and relining of tunnels and another on oil storage and servicing facilities for Diesel and oil-burning locomotives.

Added to these basic features of the two programs are addresses to be made before the two groups jointly on How the Roadmaster and Bridge and Building Supervisor Can Help Hold Down Maintenance Costs, by A. E. Perlman, general manager of the Denver & Rio Grande Western, and on Safety Problems as Affected by Diesel Operation and the Increased Mechanization of Maintenance Work, by O. H. Carpenter, general roadmaster of the Union Pacific. It is plain that these associations are being directed by men with foresight to integrate their activities with current developments and with the whole railroad picture.

RESEARCH IS NO ONE-DEPARTMENT JOB

Research, as we know it in the railroad industry, is somewhat akin to an amateur gardener's results at harvest time; we get a bountiful crop but it isn't always exactly what we expected when the seeds were planted. In amongst the regular crops a hybrid creeps now and then. In agriculture the useful hybrids are the result of painstaking research over a period of years; they are not accidents.

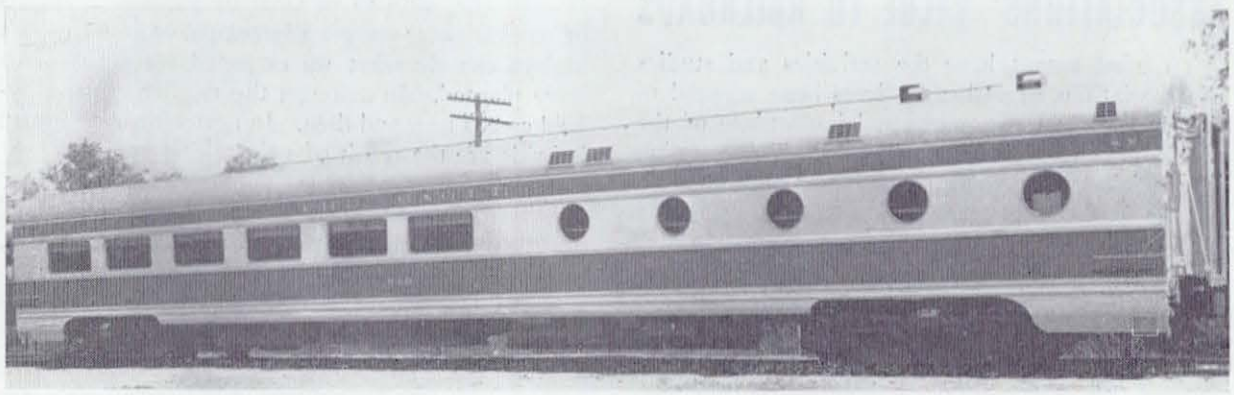
For many years that which is now dignified on many railroads by the name of research has grown, from modest beginnings in the chemical or physical laboratory, to a department, usually under the control of the mechanical department, the principal function of which is to make tests of materials to assure that the railroad is receiving from suppliers the kind and quality of product that specifications call for. The research department makes tests to determine the causes of failures of materials and parts, tests to determine the relationship of the thousands of things a railroad uses to the service expected from them. The chemical laboratory and the test department are necessary to efficient railroading—but they are *not* research.

Research has been defined too often to justify the repetition here of any of the several acceptable expositions of the term. There is need for a broad-gaged research program in the railroad industry—by the railroads, in the interest of improving their services; by the manufacturers to improve their products; and by associations, such as the A.A.R., where an impartial study is needed in the best interests of both the railroads and the suppliers.

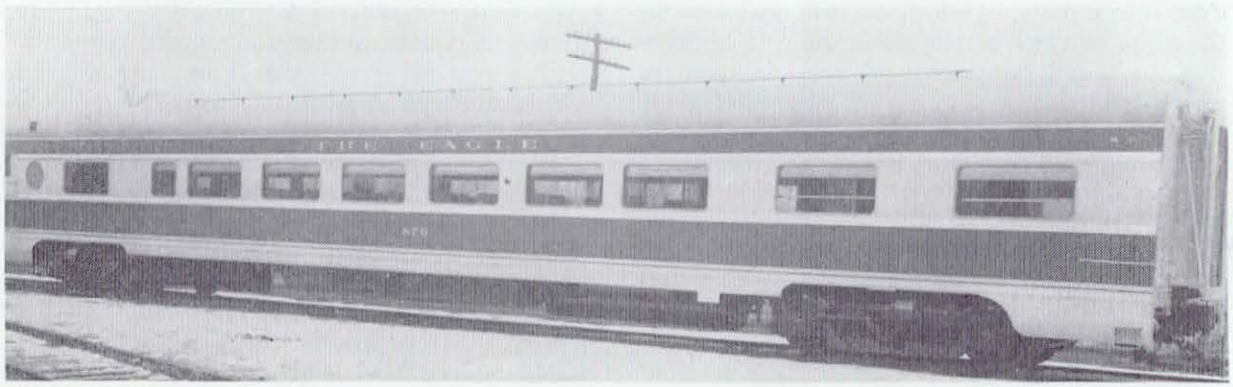
What are now known as research departments on many railroads are evolutionary hybrids (if the term may be used as purely descriptive) which have resulted from the seeds planted many years ago in the chemical and physical test departments. In almost every case they still are specifically mechanical-department institutions although the need for research has far outgrown the requirements of a single department. It seems time for management to recognize this fact by removing the "research" department from mechanical-department control, placing it where it can survey the needs of the entire railroad by reporting to executive and not departmental offices.

DINERS AND GRILL CARS FOR THE "EAGLES"

Two full diners, eight diner-lounges and nine grill coaches of two types among the cars built by American Car & Foundry for Missouri Pacific—Texas & Pacific



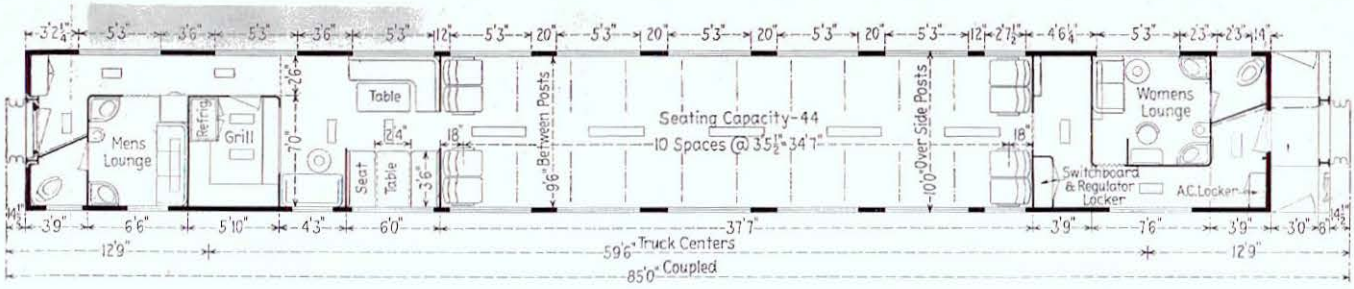
One of the two dining cars built by the American Car & Foundry Co. for the Missouri Pacific and Texas & Pacific



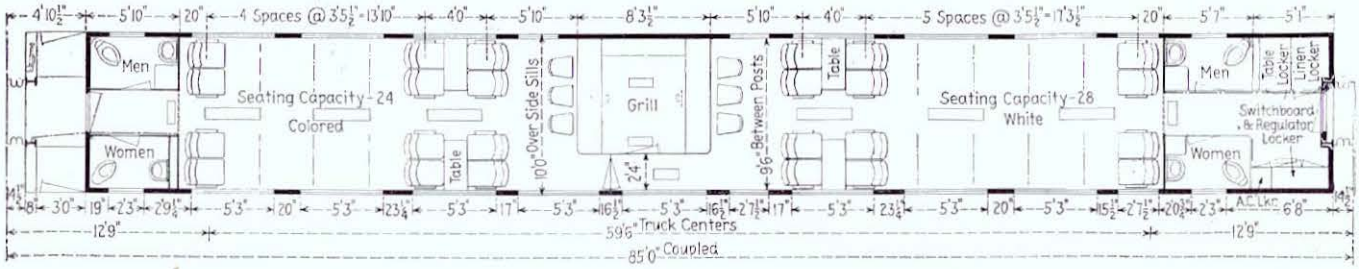
Five lounge-grill coaches have been delivered to the Missouri Pacific and two to the Texas & Pacific

Among the 134 new passenger-train cars ordered by the Missouri Pacific and Texas & Pacific, primarily for establishing a number of new "Eagle" trains, are 69 of 10 types now under delivery from American Car & Foundry Co. Four types of coaches and two types of head-end cars were the subjects of an article in the August 28 issue of *Railway Age*, page 42. The other four types are diners, of which one is to be delivered to each of the two railroads, diner-lounge cars, of which five are for the Missouri Pacific and three for the Texas & Pacific, lounge-grill coaches, of which five are for the Missouri Pacific and two for the Texas & Pacific, and grill coaches, two of which were ordered by the Missouri Pacific for the south Texas daylight streamliners.

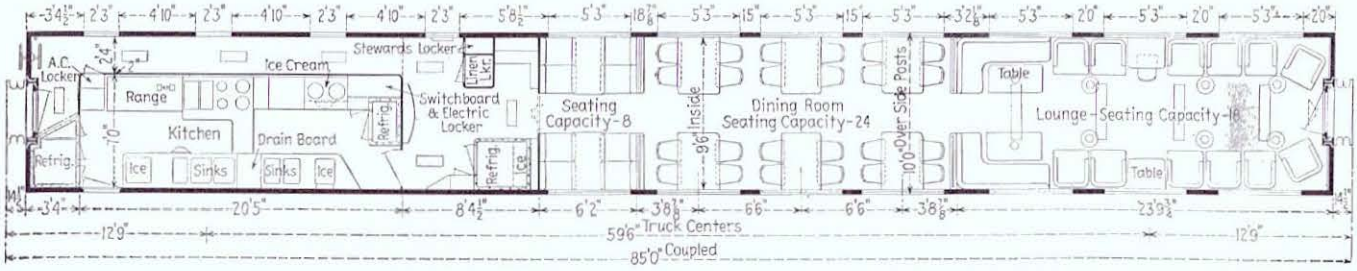
Like the coaches described in the earlier article, these cars have underframes of low-alloy high-tensile steel, except the platform center sills and end and side sills. The platform center sills and draft lugs, buffer casting and coupler carrier are Commonwealth integral castings of low-carbon alloy steel. The underframe and sideframe side sills and the car body structures of



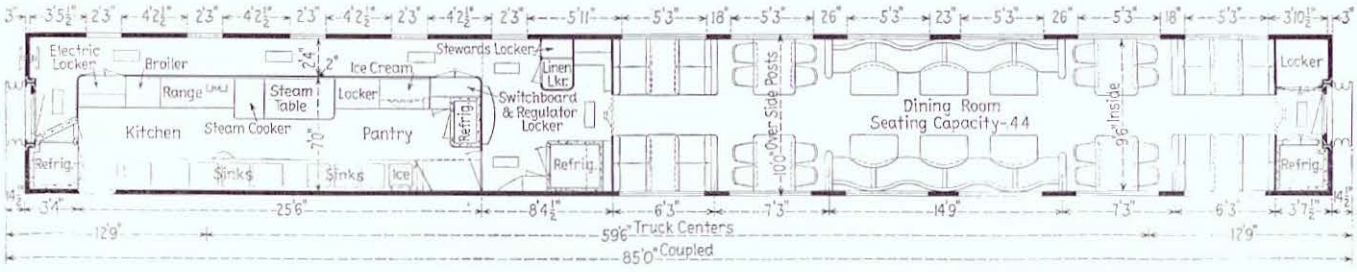
Grill coach with men's and women's lounges



Divided grill coach with counter service toward each end



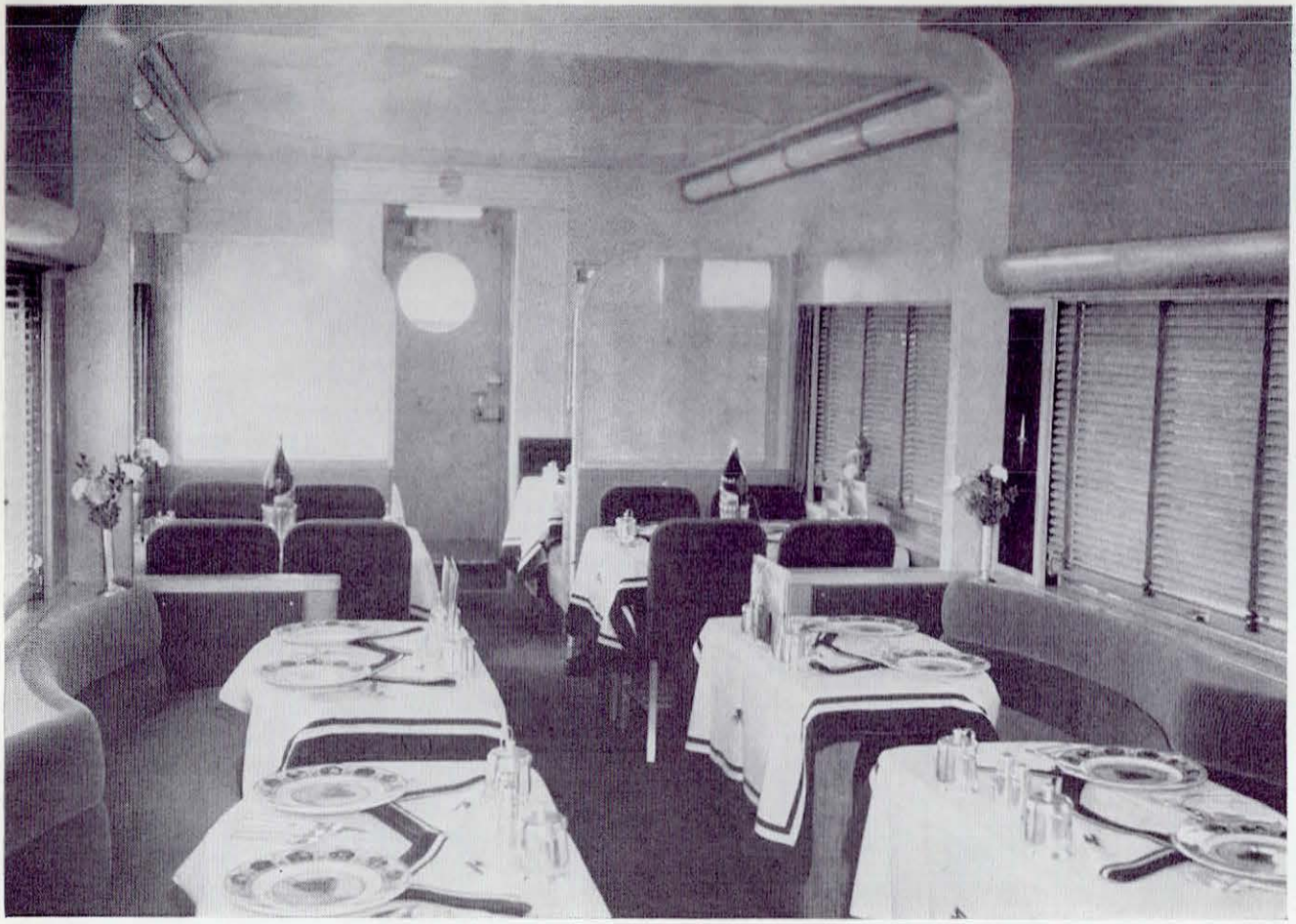
The diner-lounge car

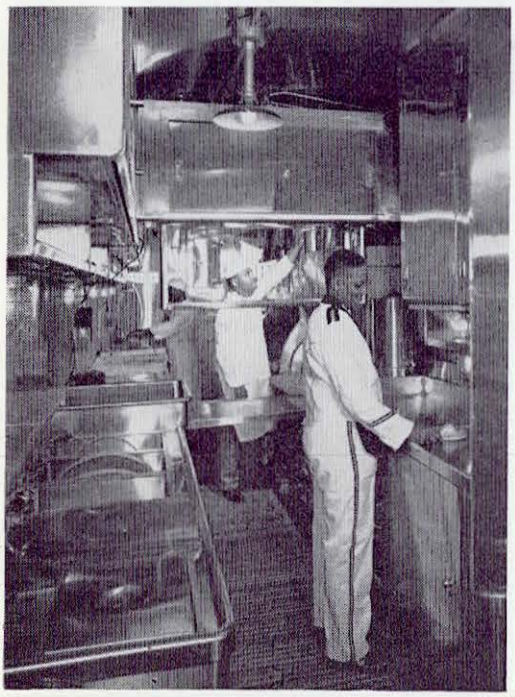


The dining car

the passenger-carrying cars are built entirely of aluminum from the Aluminum Company of America. The side sills, and corner and end posts, side plates and end plates are of 17ST alloy, the side posts, carlines and purlines of 61-ST-62, and the roof and side sheathing of 24ST.

Each of the two dining cars has a seating capacity of forty-four. An important feature in their design is the arrangement of tables and chairs in the dining room. Two tables for four at each end of the dining room have fixed settee-type seats with places for two passengers on each side, while two other tables for four, adjoining those at each end, are similarly arranged but have movable chairs. The 12 remaining places in the middle of the dining room, at six tables for two, are installed against two serpentine settees running lengthwise with the cars. These settees are so built that the passenger will be sitting at an angle of about 30 deg. with the side wall enabling him to see out the windows with minimum effort. The tables are Formica-topped aluminum with sealed edges; those for four are portable. Chairs are foam-rubber-cushioned

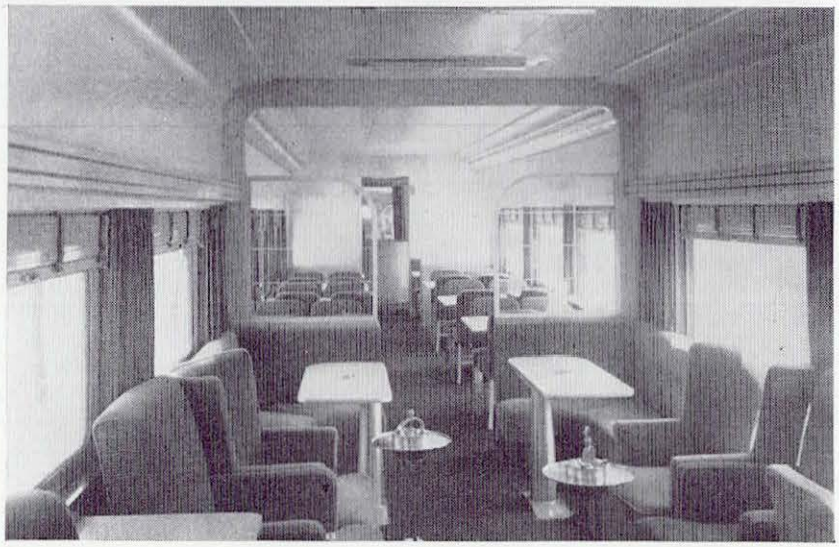




The dining car seats 16 at tables for four at each end of the dining room and 12 in the middle at side tables for two each

The stainless-steel dining-car kitchen

In the diner-lounge car looking toward the kitchen



aluminum with rust upholstery, while the serpentine seats are built in place with hair-filled backs and hair and spring seats upholstered in gray mohair.

Each table grouping is separated from the the others by partitions. Those at the end of the serpentine seats are the same height as the seat backs, while the partitions which segregate the tables at each end are solid to approximately chairback height, with edge-light plexiglas from the top of the partitions to 6 ft. above the car floor. Spaciousness is accentuated by the use of mirrors at each end of the car.

The interior decorations feature the lighter colors, except for black satin-finish Micarta with a bronze star in the center of each pier panel behind the serpentine settees. The other pier panels are tan, the ceiling is yellow and the wainscoting sand. At the larger tables mulberry drapes frame yellow venetian blinds, striped to match the henna rust carpet. All trim is satin-finish aluminum.

Direct fluorescent lighting is utilized in the passageway and the large-table sections of the dining room. Indirect lighting of the same type is used in the table-for-two section. The kitchen and pantry have incandescent light.

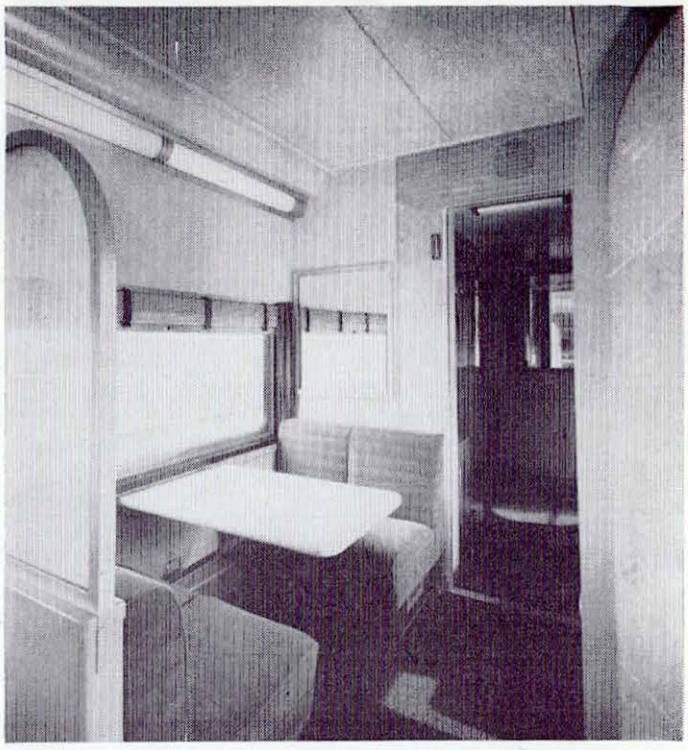
At the dining-room end of the car are a general storage locker on one side, and a mechanical refrigerator for frozen foods opposite. Between the dining room and the kitchen is a foyer which contains the steward's work space and locker, refrigerator, linen locker, glassware cabinet, and buffet and mirror in line with and facing the dining room aisle. This area is covered with a carpet matching the dining section, which is removable to prevent soiling. The linoleum floor underneath is for use when the car is being loaded or repair work is being performed in the kitchen. The steward controls the radio from this point, the R.C.A. broadcast receiver serving two 9-in. speakers set in the bulkheads at opposite ends of the dining section. The car is also completely wired for installation of a public address system.

Kitchen and pantry areas are separated by a partition with a movable table underneath, there being plenty of space between them for food and utensils to be passed back and forth freely. From the foyer bulkhead to the end of the car along the corridor wall are a general refrigerator, lockers, ice-cream cabinet, steam tables and steam cooker, a Stearnes oil-burning range, broiler and bins for staples and charcoal. At the corner formed by the side and end of the car, is a general storage ice box, while against the outside wall are the usual work spaces and sinks. There is a loading door from the outside at the end of the car. Both areas are well equipped with overhead storage and locker space. The entire kitchen and pantry are done in stainless steel for ease in cleaning.

Diner-Lounge Cars

The diner-lounges differ from the dining cars chiefly in a rearrangement of a part of the dining room and the shorter kitchens required. These are 20 ft. 5 in. in length as compared to 25 ft. 6 in. in the full diners. The kitchen equipment is similar, as is the arrangement of the facilities. The foyers are identical in size and arrangement.

The dining room seats thirty-two, at six tables. The



The end tables in the dining room of the diner-lounge cars are behind Plexiglas partitions

two nearest the glass-faced foyer bulkheads have fixed seats with rust-upholstered spring and haircushions and backs while for the others there are twenty-four chairs with aluminum frames and foam-rubber cushioning upholstered with Goodall petit point rust. The tables are of aluminum with Formica tops. The folding table legs are supported from the side wall of the car.

Both the dining room and the lounge have canary yellow ceilings with wisteria wainscoting and pier panels. The bulkheads above the end mirrors are sand-colored. Goodall medium blue drapes framing the 5 ft. 3 in. windows harmonize with two-tone blue Beck & Blatchford carpet in the dining and lounge sections and the foyer. Sponge-rubber carpet cushioning is used throughout while in the foyer, where the carpet is removable, Armstrong linoleum also has been laid.

The use of partitions creates a coziness without taking away from the impressive appearance of the car's interiors. Between the first and second sets of tables from the kitchen is a built-up partition which is solid to the height of the seat backs, with edge-lighted Plexiglass from that point to 6 ft. above the floor. The partition between the dining room and the lounge is also solid to seat-back height but has decorative glass above.

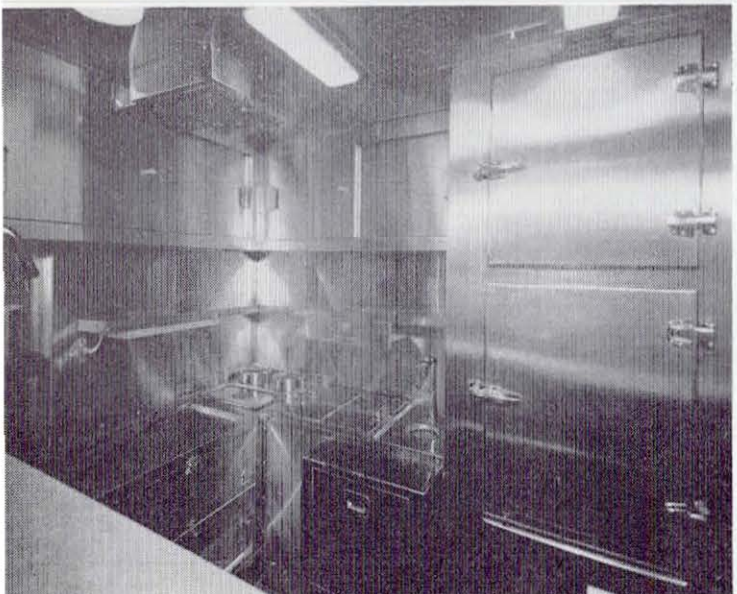
Seating eighteen, the lounge is decorated in keeping with the dining room. Twelve lounge chairs are covered with Goodall mohair in rust or in gray. Built-in seats for three in the corners framed by the side walls and partitions have fixed tables in front of them. A writing desk and chair, magazine table, Climax ash stands of special design and illuminated photo-murals covered with glass applied at the end of the car complete the lounge. The cars are radio equipped with controls at the steward's desk.

Fluorescent lighting is the sole source of illumina-

The coach section of the lounge-grill coach as seen from the lounge

Passengers are served in the lounge and in coach seats of the lounge-grill coach

The kitchen in the lounge-grill coach as seen from the service counter



tion with the exception of the kitchen and stand-by incandescent lamps for emergencies. Cove fixtures light the dining sections, with trough lighting above the windows and across the ends of the lounges.

Lounge-Grill Coaches

To provide for a wide variety of service requirements, nine grill coaches are being built, seven of them with lounges seating nine each adjacent to the grills. The main coach space seats forty-four in lightweight reclining chairs with drop center arms. Large men's and women's lounges with adjacent toilets complete the car.

The compact grill is in a space 5 ft. 10 in. by 7 ft. It is fully equipped for refreshments and light meals. All equipment is stainless steel for ease in cleaning, with a serving shelf of mother-of-pearl Formica in the opening between the lounge and the grill. The Silex coffee-maker, refrigerator, ice-cream cabinet, cash register and ample working space make this a highly efficient food-producing unit. The grill can be closed by means of a metal roll-up curtain during off-hours without interfering with 24-hr. use of the lounge. A locker has been added to provide storage for tables used for service at the seats.

The lounge seats nine, three on an L-shaped settee at a table with built-in ash-tray, four at a table in the middle of a lounge window and the other on a lounge-type sofa for two. All seats are spring-and-hair cushioned, covered with Goodall plush in rust. This is in striking contrast to a canary yellow ceiling, tan pier and wainscoting, and garnet Beck & Blatchford rubber-cushioned carpet. The same color scheme is also carried through the coach section. Adams & Westlake curtains are of gold silk-faced Pantasote.

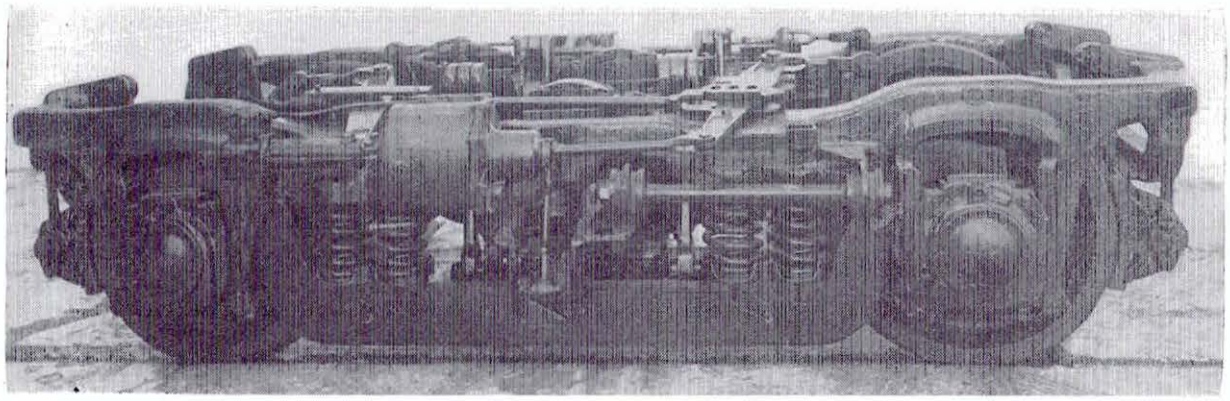
The women's lounge, the floor of which is Armstrong heavy-gage linoleum as in the passageways, toilets and men's lounge, contains two washstands, a sofa for two and a vanity. A combination serving and ash-tray, ample shelves, mirrors and lights are part of the comforts provided for women travelers. The men, too, have ample space in the smoking room which features washstands and a sofa for three.

An R.C.A. factory-matched radio receiving set has been placed in a locker in the men's lounge, serving five 7-in. speakers mounted above the center ceiling panel. The car is also equipped for later installation of a public-address system.

Lighting is fluorescent throughout with the exception of vestibule, toilets, and lighted lockers. Additional features are luggage shelves, a pillow locker and a lighted poster frame. There are decorative photo-murals on the coach section-bulkhead at the opposite end from the lounge.

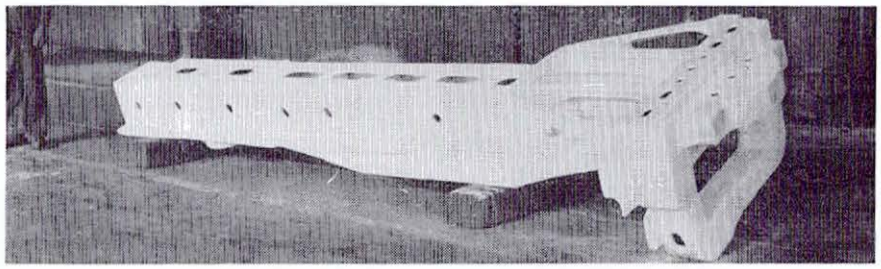
Grill Coaches

The two grill coaches serve a purpose similar to that of the lounge-grill coaches, but are completely different in design. There are two practically duplicate sections in this car, one for colored and the other for white patrons, with only one common facility, the grill in the middle of the car. This is so arranged that it is open towards both sections with three stools at each of the two counters. Tables can be placed at seats



One of the Commonwealth all-coil-spring trucks

The General Steel Castings one-piece platform center sill



Weights of Missouri Pacific and Texas & Pacific Passenger Cars Built by American Car & Foundry Co.

Type of car	Total Light weight, lb.	Trucks, lb.	Total loaded weight, lb.
Mo.P. baggage dormitory	143,700	51,800	191,700
T.&P. baggage dormitory	143,140	51,800	191,140
Mo.P. baggage mail	131,420	51,300	207,790
Mo.P. baggage mail	130,600	51,300	206,970
T.&P. baggage mail	130,280	51,300	206,650
Mo.P. undivided coach	123,500	38,560	137,460
T.&P. undivided coach	123,245	38,569	137,205
Mo.P. divided coach	125,300	38,560	139,570
T.&P. divided coach	124,650	38,560	138,920
Mo.P. diner	134,700	38,800	153,116
T.&P. diner	132,600	38,800	151,016
Mo.P. diner-lounge	131,220	38,800	148,070
T.&P. diner-lounge	130,467	38,800	147,317
Mo.P. dormitory coach	125,050	38,560	138,927
Mo.P. lounge-grill coach	125,260	38,560	140,510
T.&P. lounge-grill coach	124,600	38,560	139,850

for meals also, which gives a substantial dining capacity to the coach, all the more desirable because most space is revenue-producing. There are 28 lightweight reclining coach seats with adjustable foot rests and drop center arms. Manufactured by Heywood-Wakefield, they are chrome and stainless-steel trimmed, upholstered in Collins & Aikmen gray plush. Seats are spaced 3 ft. 5-½ in. on centers.

There are two men's and two women's toilets, one of each at each end on opposite sides of the center aisle. In addition, at the non-vestibule end are lockers for tables, linen, air-conditioning and electrical controls.

The floor covering is Armstrong linoleum in the toilets and the passageways between them while the remainder is sponge-rubber cushioned two-toned garnet carpet by Beck & Blatchford. It harmonizes with the yellow ceilings and baggage racks and bulkheads, frieze, pier panels and wainscoting of tan. Windows have extruded aluminum window frames and are curtained with gold-colored silk-faced Pantasote.

Adlake breather-type windows are installed in the dining-lounge cars and lounge-grill coaches.

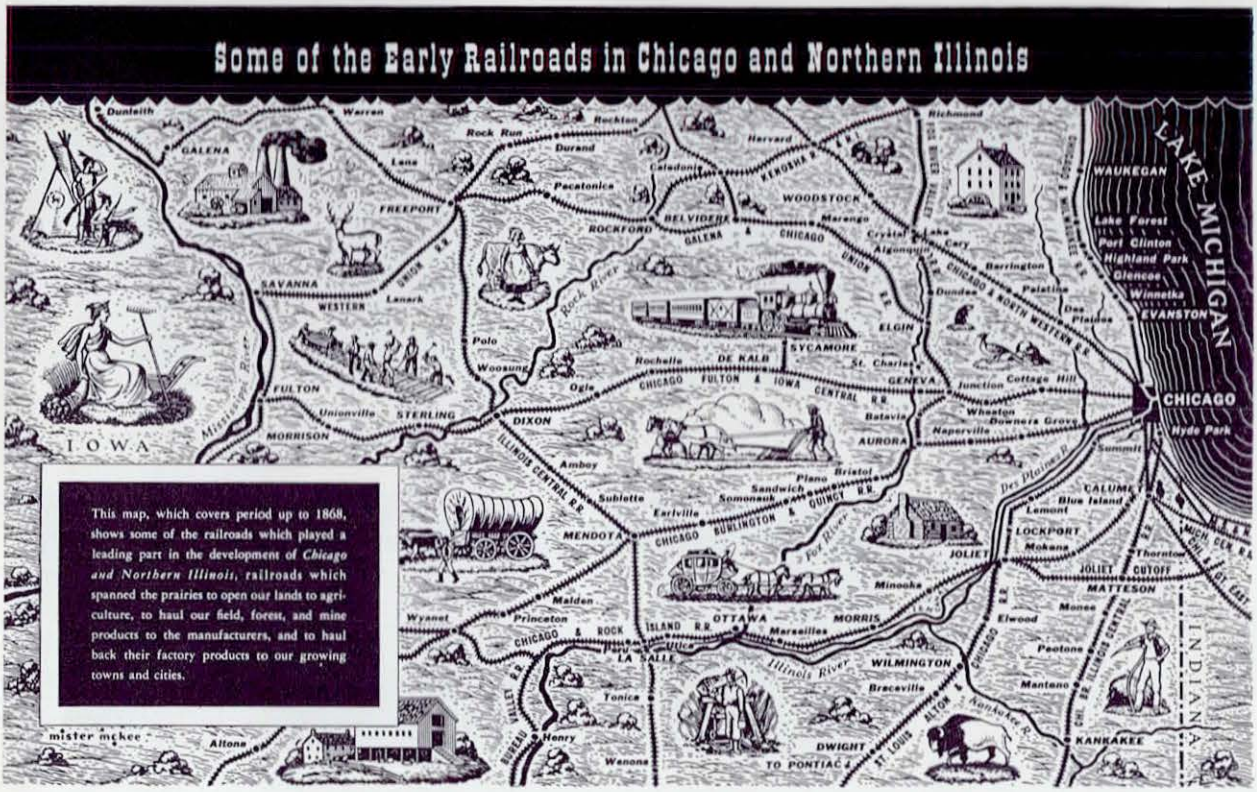
Electric-power is supplied by a 25-kw. Safety genemotor at 80 volts for the 64-volt d.c. power system. A 2-kw. motor alternator supplies 110-volt a. c. power for the fluorescent lighting load, and a Jeanette 300-volt-ampere convertor serves the radio and convenience outlets with 115-volt a.c.

The air conditioning system of eight tons capacity in these cars is the same as in the coaches, with one exception. In the grill coach there are two-four-ton evaporators and two circulating systems of 1,400 cu. ft. per. min. each instead of one 8-ton evaporator and a single 2,800-cu. ft. per min. circulating system.

The four-wheel trucks, brakes and end equipment are also the same for all the passenger carrying cars, except that the trucks at the kitchen ends of the diners and diner-lounge cars have 6-in. by 11-in. journals while all others have 5½-in. by 10-in. journals. All trucks are equipped with Timken roller bearings.

The weights of all the "Eagle" cars built by American Car & Foundry Co. are shown in the table. The list of suppliers of materials and equipment which appears on page 47 of the August 28 issue applies also to the cars which are the subject of this article.

C. G. W. FREIGHT RATE CONVERSION TABLE—A rate conversion table reflecting the Ex Parte 166 freight rate increases effective on August 21 has been issued by R. G. Hawkinson, freight traffic manager of the Chicago Great Western. Copies may be obtained from Mr. Hawkinson at 300 West Jackson boulevard, Chicago 6.


Some of the Early Railroads in Chicago and Northern Illinois
This map, which covers period up to 1868, shows some of the railroads which played a leading part in the development of *Chicago and Northern Illinois*, railroads which spanned the prairies to open our lands to agriculture, to haul our field, forest, and mine products to the manufacturers, and to haul back their factory products to our growing towns and cities.
LAKE MICHIGAN
CHICAGO
IOWA
INDIANA
mister mckee

ONE HUNDRED YEARS' DEVELOPMENT OF RAILWAYS IN THE CHICAGO AREA

By SAMUEL O. DUNN,
Co-editor, *Railway Age*

PART II

(This is the second half of a paper presented by Mr. Dunn before the Chicago group of the Newcomen Society on November 6, 1947. Part I appeared in last week's issue.—EDITOR)

A map of the railway pattern within the Chicago district shows a number of radial lines intersected by circumferential lines at intervals moving outward from the center. Due to the fact that the city is flat and only Lake Michigan — to a limited extent — has impeded the free laying of railroad lines, there has been no restriction of entry routes to a few valleys — as at Pittsburgh, for example. On close study, however, the railway pattern of Chicago reduces to seven approach routes to the central portion of the city.

The circumferential lines which intersect the radial routes are the famed belt lines of Chicago. The outermost is the Elgin, Joliet & Eastern. This unusual railroad crosses every main-line road entering Chicago, at a distance of 25 to 40 miles from the center of the city. It is 130 miles in length from Porter, Ind., to Waukegan, Ill. and passes for the most part through rural areas. It handles from 20 to 25 per cent of the total traffic of all belt and switching railways in the Chicago area.

The other belt lines, which are well within the switching district proper, intersect the main-line railways at points much closer to the center; and, unlike the "outer belt," are situated in densely built-up industrial areas. The principal of these belt lines are the Baltimore & Ohio Chicago Terminal, the Indiana Harbor Belt and the Belt Railway of Chicago.

Each of the principal trunk lines serving Chicago operates its road freight trains into one or more major classification yards, which have certain characteristics in common. In general, they are located well inside the Elgin, Joliet & Eastern and either just outside or just within the next belt line toward the center of the city. Thus these great yards lie just beyond the girdle of industry that encircles the city and its inner suburbs. This location enables the belt lines to transfer cars to and from trunk line classification yards without back

haul. Being outside the built-up area of the city has permitted the yards to be planned on an adequate scale without excessive cost of land. Cars from, or destined to, freighthouses and sidings of the trunk lines toward the center of the city may be handled efficiently with transfer cuts between those points and the classification yards.

Movement Outward

Over the years there has been a peripheral movement of classification yards from the trunk line roads outward from the center of the city. Hence, there remain a number of old freight yards on most of the lines near the center of the city which have outgrown their original function of classification yards for the assembly and break-up of road freight trains. They now serve as industrial yards or interchange yards for local transfer trains. For the most part, road freights make up and break up in the outer yards.

Other important forces have worked toward the improvement in efficiency of the Chicago Terminal. The rise of the motor truck, the progressive movement of industry outward from the center of the city, and the general long-term reduction in less-than-carload traffic on the railroads, have made it possible for the roads to eliminate a number of their downtown freight houses, which are expensive to maintain, and to reduce the number of so-called "trap" and "ferry" cars for less-than-carload traffic between different freight houses and between freight houses and industries. This reduction of purely local, intra-city hauls by rail has been highly beneficial in reducing congestion in the area and reducing terminal expenses.

Chicago has a number of notable special terminal facilities. Chief of these is the Chicago Produce Terminal which handles approximately 70,000 cars of fruits and vegetables a year and has a total capacity of more than 2,000 cars at one time.

Chicago is the principal livestock market of the country and its facilities for handling livestock are probably the most complex in existence. By federal law, railroads are prohibited from transporting livestock continuously for more than 36 hr. without food and water. Therefore, for most of the stock in transit through the city and much of the stock to be slaughtered there feeding and watering facilities must be provided by the individual railroads. In most cases these facilities are located at a considerable distance from the city — those on the North Western, for example, being at West Chicago, 30 mi. from the center of town, and those on the Burlington, 3 mi. southwest of Aurora and 40 mi. from Chicago. The belt lines also operate large stockyards at Clearing, at Calumet City and at East Blue Island.

The great Chicago Union Stockyards themselves are a railroad-inspired institution. When railroads to the west were opened, each western road operated its own receiving yard for livestock on the western edge of the city. By 1864 there existed six separate stockyards. As there were then no refrigerator cars, meat had to be moved on the hoof to eastern markets, and the interchange of livestock from six western stockyards to the eastern roads was a complex and noisome operation. In 1865 a number of railroads solved the problem by opening the Union Stockyards at what was then the southern edge of the city. Each participating road had the privilege of operating its trains directly into the facility, and the stockyards themselves were made accessible to all roads by the Chicago Junction Railway.

As a primary grain market, Chicago possesses a large number of grain elevators concentrated along the Chicago and Calumet rivers, particularly along the latter. Here free interchange is made between the railroads and Great Lakes vessels, while during the winter when the lakes are closed, many millions of bushels of grain are normally stored in the elevators awaiting movement by Lake in the spring. Some large grain elevators are owned by the individual railroads.

The Passenger Stations

Railway passenger business is handled in downtown Chicago by six major terminals, with which are associated large yards, baggage and express buildings and mail handling facilities.

The early commercial center of the city was along the axis of Lake street parallel to, and south of, the Chicago river. About 1870, the center of trade shifted to State street where it has remained ever since. During the period of development, each road sought to locate its terminal as close to these business centers as possible. Lines that approached from the south, for example, pushed their tracks far up the narrow peninsula separating the river and the lake.

The newest passenger terminal in Chicago is the Union station, built in 1925 to replace an older structure nearby. This station serves the Pennsylvania, Burlington, Alton and Milwaukee roads. It is notable for the use made of air rights over the tracks approaching from both the north and the south. In connection therewith, the federal government built Chicago's main post office. North of the Union station is the North Western's terminal, which was opened for service in June, 1911, at a cost of approximately $24 million. This station had 10 predecessors. The first of them — the first railroad depot in Chicago — was a one-story, wooden structure built by the Galena & Chicago Union in 1848 at the southwest corner of what is now Kinzie and Canal streets. To this building was soon added a second story which was used for general offices of the road; and President Turner often watched for incoming trains with a long, marine telescope with which, in good weather, he could see them approaching as far away as Austin, 6 mi. out of town.

The Illinois Central station at Roosevelt Road, opened for service in April, 1893, just in time for the World's Fair, was considered a monument among passenger stations at the time.

The presence of the Illinois Central on the lake front is one of Chicago's most interesting stories. Its line to Chicago was originally but a branch of the main line which ran from Cairo north through the middle of the state to Freeport. The Chicago branch broke off at Centralia. The railway desired to enter the city along the west bank of the Chicago river north to Kinzie street, to connect with the Galena road. Mayor Gurnee and the city fathers, however,

forced the railroad by ordinance to build along the lake front, where they required it to erect a breakwater to protect property of the mayor and others from devastation by high water. In 1852 temporary freight and passenger stations were erected at 22nd street — then the city limits. A few years later a passenger station was erected north of Randolph street at South Water street. In 1875 this station was replaced by a large new permanent station which had eight tracks under a large train shed, and cost $180,000 — a notable structure for the period. Completion of the St. Charles Air Line in 1856 made it possible for the Burlington and the Galena to run certain of their trains into the new lake front passenger station. The Galena withdrew from this operation a year later, but the Burlington continued to use the station and its successor after the fire until 1881 when it moved into the Union station.

The year 1856 also saw the operation of the first Illinois Central suburban train — as far south as Hyde Park — when a local real estate operator agreed to give the railroad needed land if it would take care of the city's pioneer commuters. This was the beginning of the development of one of the world's finest suburban passenger services, now electrified with 280 multiple unit cars operating over 132 mi. of track, and carrying almost 48,000,000 passengers in 1946.

Lake Front Controversy

Although the Illinois Central's location along the lake front was compelled by civic selfishness, the railroad long afterward was hounded for having "stolen the city's front yard." The resulting controversy was finally ended by the famous Lake Front Ordinance of 1919 under which the road was required and agreed to elevate its tracks between 27th and 51st streets and to electrify its service within the city limits. The Illinois Central complied with the major portion of the ordinance by electrifying its suburban service in 1926. It has subsequently accomplished the Dieselization of its switching operations within the city limits. Only a few of its through passenger trains are now steam operated within the city.

It remains to consider the three passenger terminals which adjoin one another on the south side of the business district. Dearborn, the oldest, was opened in 1885 by the Chicago & Western Indiana, which served as a terminal property of the Chicago & Eastern Illinois, the Grand Trunk Western, the Wabash, the Monon and the Erie. In 1887 the Santa Fe joined the group as a tenant. This old depot has recently been modernized, and travelers are able to watch the fascinating activities in the train shed through an ingenious observation window in the upstairs waiting room.

The station next to the west — LaSalle Street — was opened to traffic in July, 1903, by the Rock Island and the New York Central, with the Nickel Plate as a tenant. This fine structure replaced a station built after the Chicago fire which was placed in service with a grand opening celebration led by Patrick Gilmore and his world-renowned brass band to commemorate the recovery of the city from the great fire. The train shed of the old station was floored with planking and given over to jubilee concerts which lasted for three days. It was referred to in after years as the "Hall of Courage" in which Chicagoans marked the progress of the rebuilding of their city.

Grand Central station was opened in 1891 by the Chicago & Northern Pacific, which had been organized by Henry Villard to form a new western route out of Chicago. This station, which now serves the Baltimore & Ohio, the Soo, the Great Western and the Chesapeake & Ohio is of Norman castle style. The architectural idea is carried out completely with a high watch tower, flanking towers and a barricade approach; officers of the Baltimore & Ohio, if ever so inclined, could climb into the cornices and pour burning sand and molten lead upon their enemies below, as did our Norman ancestors.

Suburban Traffic Up

The suburban passenger business in Chicago, although it is becoming more and more unprofitable to the railroads, is a very important factor in the city's life. The five steam railroads which carry the greatest number of suburban passengers have all increased that business tremendously over the past 40 years, in spite of the competition of the transit systems and the private automobile. In 1946 the suburban business of the Illinois Central was 238 per cent larger than 40 years before; that of the North Western, 73 per cent greater; that of the Rock Island, 167 per cent greater; that of the Burlington, 156 per cent greater and that of the Milwaukee, 393 per cent greater.

It might be assumed that with the rise of motor transportation the number of through passengers handled by the railroads into and out of Chicago had declined within the last third of a century. On the contrary, it has largely increased. The number of through passengers using the North Western terminal in 1946 was 89 per cent greater than in 1912. The number using the Illinois central station was 47 per cent greater; LaSalle street station, 71 per cent greater; Dearborn station about the same; Union station, 90 per cent greater and Grand Central, 70 per cent greater.

Railroads occupy a great deal of land in Chicago, and the outline of the city and its division into sections have been determined largely by the location of railroad lines and yards.

For no less than 75 years, various public and private bodies have tried to persuade or force the railroads to so consolidate, remove or improve their property as to reduce their occupancy of land. Many of the plans were good — most of them were too expensive.

Because of the flatness of the Chicago plain, grade crossings both between the railroads themselves and with streets have been an enormous problem. The expensive work of elevating tracks was forced by the city, beginning in 1892, when the Illinois Central was ordered to elevate its line from 51st to 67th streets in anticipation of the World's Fair. Popular clamor resulted in the famous O'Neil ordinance of 1893 which required the elimination of all grade crossings by track elevation within six years. This hopelessly impracticable requirement had to be abandoned, but, by 1908,

the railroads had completed 74 per cent of the work stipulated in the ordinance, at a cost of $72,622,000. Of this cost, the city paid less than one per cent. In numerous instances the railroads, on their own initiative, did work not required by law.

Improvement plans proposed from non-railroad sources have had as their purposes chiefly smoke abatement, removal of downtown freight stations, and consolidation of passenger terminals and yards to make land available for expansion of the business district, and, finally, the reduction of terminal operating costs. There have been too many such plans and proposals for even enumeration of them.

In 1912 the Chicago Association of Commerce started an inquiry with respect to the desirability of electrifying all railroad lines within the city. The result was a monumental report which found (1) that the railroads were responsible for only a small proportion of smoke and dust; (2) that the electrification of all the terminals was entirely practicable; but, (3) that the cost of the project would be so great that it could never be financed by the railroads by the investment of private capital. It is fortunate, indeed, that the original proposal was never carried out. Complete electrification would have forced a tremendous reshuffling of facilities within the city, and great delays to trains necessitated by transfer from steam to electric locomotives at the city's borders. Diesel-electric locomotives have now taken over approximately half of the through passenger service in the city; an estimated one-third of the switching in the entire city; and virtually all of the switching in the downtown section. They have accomplished all the reduction of smoke and noise that the much more inflexible and vastly more expensive electrification of terminals would have caused.

Taxable Private Investments

The railroads themselves are now studying a plan for a new south side passenger terminal which would replace the Dearborn, LaSalle, Grand Central and Illinois Central stations. There also continues in existence a Railway Terminal Commission which reports to the city council and which has been making a study of the extent to which operations in the city have been Dieselized.

There is one vitally important point about the 100 years' development of the railways within the Chicago area which should not, under present conditions and trends in transportation, be ignored. Every dollar ever spent has been private capital—raised and invested by private corporations in property which is heavily taxed, like other private property, for the general purposes of government. Furthermore, every proposal from outside sources ever made or now being made that additional large expenditures on railroad facilities be made within the area has contemplated that the required capital should be raised by the railroads themselves and should be taxed after its investment.

This was as true in the early pioneer days as it has been ever since. As far back as 1855, the Galena road not only had to pay for its own roadway and station facilities, but had even to subscribe a substantial amount for the building of the Rush street vehicle bridge to provide access for carriages and foot passengers to its station on Wells street. Previously the company had voted to pay for a portion of the new bridge across the river at Clark street. Similar policy would require the air lines — which are now long past the pioneer stage — not only to pay the entire cost of airports and taxes on them, but to chip in for the new airport approach boulevards now on the drafting board.

The demand for the construction of a new large south side passenger terminal is being made for the benefit of Chicago, not for the benefit of the railroads. Why, then, should not the city provide the stations as it provides airports?

Railroad managements cannot justifiably finance entirely at the cost of the railroads such a project as the south side terminal — the cost of which is estimated at as high as $200,000,000. Why should they finance such a huge civic improvement for the benefit of Chicago, in view of the fact that they derive their earnings from so many communities and such extensive territories which have equal claims on them?

That large-scale railroad improvements are needed in Chicago is unquestionable. But, as is indicated by the improvement and expansion of their facilities in the Chicago area for a hundred years, the railroads can be depended on to continue, day by day, in accordance with the opportunity they are afforded to alter their properties in this area, in ways that will be advantageous to their customers and the people of Chicago, provided their managements can be convinced that the improvements made will be advantageous also to the investors from whom they must get private capital.

[The author of this paper drew liberally from the contents of a thesis produced at the University of Chicago, provided their managements can be convinced Railway Pattern of Metropolitan Chicago," and from separate articles on the Chicago passenger stations appearing from time to time in the bulletins of the Railway & Locomotive Historical Society.—EDITOR]

Communication . . .

Availability of Aerial Survey Pictures

WYTHEVILLE, VA.

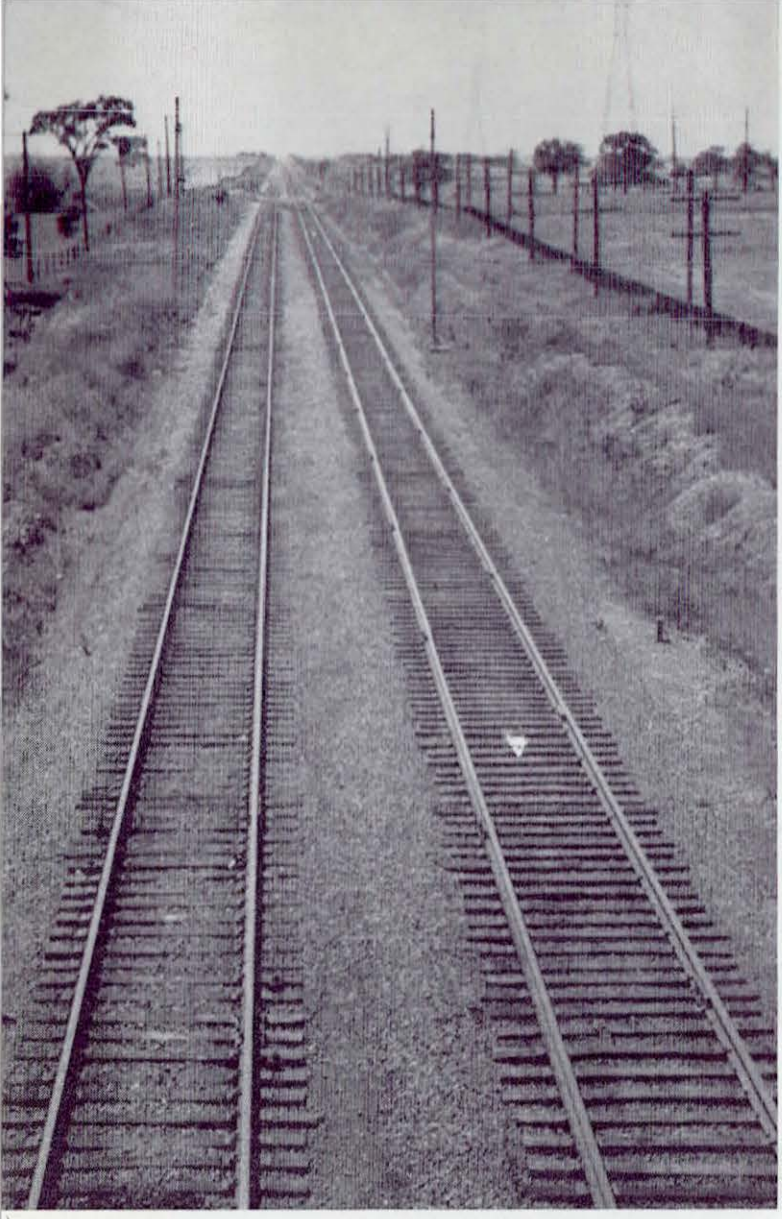
TO THE EDITOR

Your editorial on "Aerial Surveys" in the August 7 *Railway Age* was very interesting to me, engaged as I am in geodetic and topographic surveying.

Large areas of the country have been photographed from the air by various organizations; and these pictures are filed. The U. S. Geological Survey keeps an up-to-date record and map of all areas photographed and where the pictures may be obtained. These pictures have generally been made for some particular purpose (usually topographic mapping and this may not be the right scale for some other particular use; but information on what is available may be obtained from the Map Information Office, U. S. Geological Survey, Washington 25, D. C. This information is available free.

GILBERT B. GRUNWELL

CHICAGO BEING



Above—Looking west on the main line of the E.J. & E. near Brisbane, Ill. Track on left has continuous-welded rail; right-hand track has conventional joints. Below—The rail welding plant at Spragues, Ill., looking from the 39-ft. rail storage skids, along the stations of the welding set-up. Flatcar train is in far background, in line with weld-finishing stations

The Elgin, Joliet & Eastern—Chicago's Outer Belt railway—is again this year butt-welding its full allotment of new rail—approximately 15 track miles. Completion of this work will give this road, which has a total of only 277 mi. of main track, nearly 41 track-miles of continuous welded rail—all in open main tracks.

The E. J. & E., which is exclusively a freight road, handles a comparatively heavy tonnage—now largely with Diesel-electric power — but its train speeds are relatively low, not exceeding 45 m.p.h. It began laying continuous butt-welded rail in 1943, when six track miles were put in its main line near Coynes, Ill., and has laid varying amounts of such rails each year since, with the exception of 1945 and 1946, when, for various reasons, it laid only a small amount of main-line rail and did not feel warranted in undertaking the work necessary to join this rail into continuous lengths.

Lengths Up to 12,782 Ft.

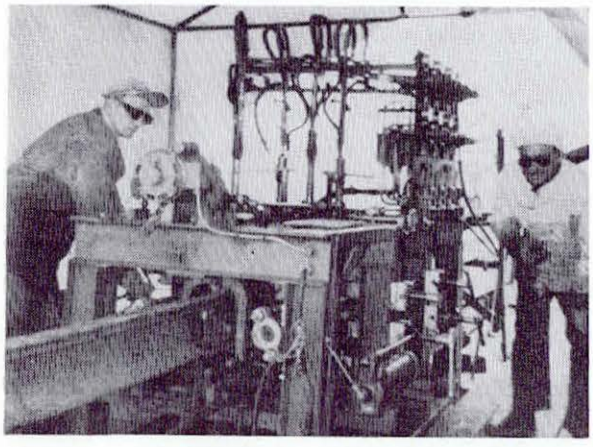
All of the rail welding has been done by the Ox-weld pressure butt-weld method. Standard 39-ft. rails have been joined into lengths up to 58 rails each, which have then been transported to the point of installation. In track, the separate lengths have been field butt-welded together to form continuous rails between insulated joints or switch layouts. Controlled by these limiting factors, the longest stretch of continuous welded rail on the E. J. & E. is 12,782 ft.

The illustrations show some of the steps in the

RINGED WITH WELDED RAIL

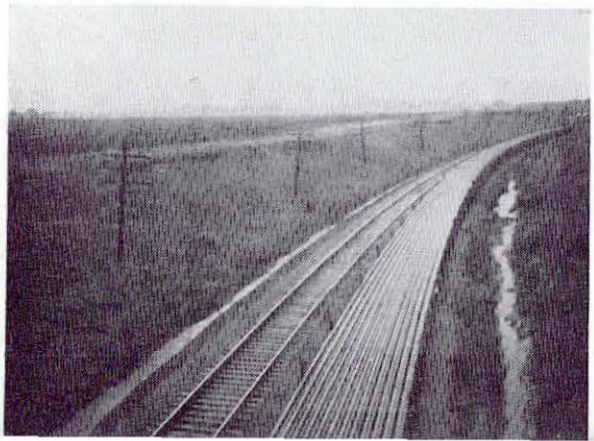
Present year's program of the Elgin, Joliet & Eastern will see nearly 41 mi. of such construction in service, with continuous lengths up to 12,782 ft.

This 2,000-hp. Diesel-electric locomotive, with a train of 43 flat cars, transports 12 of the long rails at a time

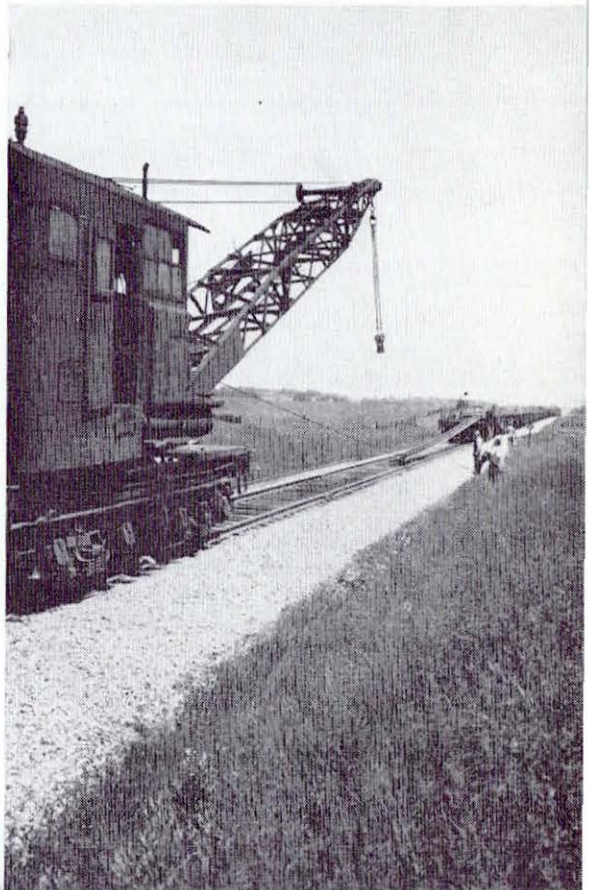


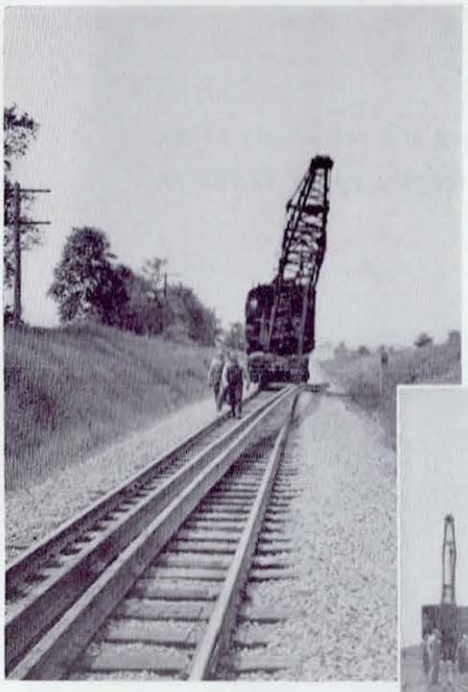
Left—The Oxweld pressure butt-welding machine, with its multi-flame torches, has been making 38 to 43 joint welds in an 8-hr. day on the E.J. & E.

Right—Unloading the rails, two at a time. A crane holds the two lengths while the flat-car train is pulled out from beneath them



Left—On the road to point of installation—12 continuous-welded rails, each approximately 1,557 ft. long. Curves present no difficulties





Left — Setting the rails, two at a time, out on the track shoulder after they have been unloaded in the center of the track

Below — Rolling out the old rails, one at a time, using safety rail forks. The continuous-welded rail is in the center of the track

road's current rail-laying program, from the welding plant to the finished installation in track. The welding equipment is located at Sprague, Ill., about two miles from Joliet. As in the usual Oxweld set-up, the welding plant includes, in order, a skid for the assembly of 39-ft. rails preparatory to welding; the pressure butt-welding machine; a cutting station, where the upset metal at the welds is trimmed off with an oxyacetylene cutting torch; a normalizing station, where the welds are given a special flame treatment to refine the grain structure of the steel in the weld area; three open-air weld-cooling stations, where the welds are allowed to cool to near atmospheric temperature; and two grinding stations, where the upset metal at the welds is ground back to provide the true contour of the rail head and a smooth swelling around the remaining periphery of the rail. At present 38 to 43 joint welds are being made in each eight-hour day.

Transported on Flat-Car Train

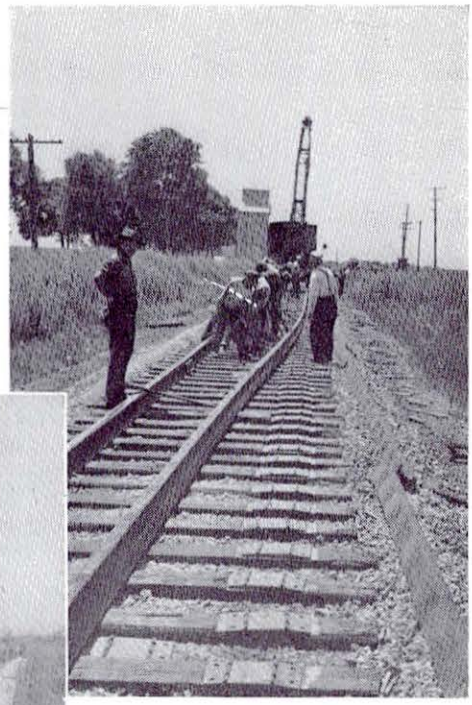
In this year's work, 132-lb. rail—one of the new A.R.E.A. sections—is being laid, and the rails are usually being welded into 20- or 40-rail lengths. The shorter lengths are for use in single-track territory, where traffic conditions do not afford time to lay more than one 20-rail length between trains, and the 40-rail lengths are for laying in double-track territory, where exclusive use of the track can be secured for sufficient time for laying the longer lengths.

As the rails grow in length at the welding plant with each succeeding weld they are pulled forward progressively, by a winch, on a string of 43 flat cars backed in on a stub-end track directly in line with the welding setup. The total length of these cars limits the length of welded strings to forty 39-ft. rails.

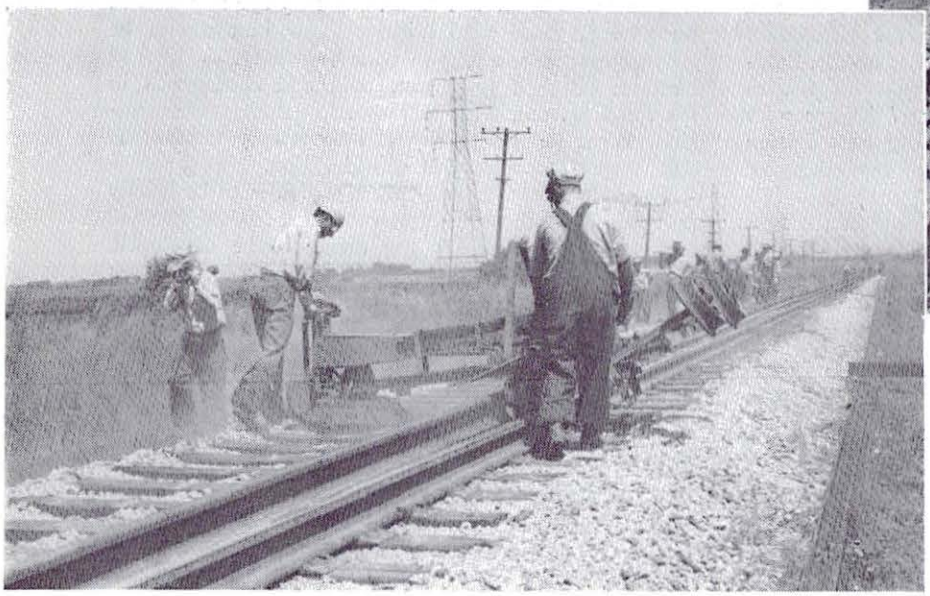
Twelve parallel lines of rails are loaded on the flat-car train, utilizing as nearly as possible the full width of the cars. Each line moves out over a series of independent rollers, in which each roller is nested in a transverse line of 12 rollers centered on each car. For transporting and unloading purposes lengths of 20 rails are joined into lengths of 40 rails by 6-hole joint bars. Each long rail is seated in a groove at each roller bearing, and is thus restrained against lateral movement on the cars. The lengths are each held against longitudinal movement on the cars by a single clamp, bolted about the base of the rail near the midpoint of its length. All of the clamps for the 12 long rail lengths are located opposite each other on the same car and are restrained in their movement between two heavy steel H-beams, fixed crosswise of the car and welded to its center and side sills.

The transporting and unloading of the rails is done on Sundays, when traffic is lightest, the loaded flats being pulled out on the main line to the point of unload-

Right—Lining the continuous rail over into position on the new tie plates



Below—Power-adzing the old tie plate seats, preparatory to placing the new larger tie plates



ing by a Baldwin 2,000-hp. Diesel-electric road locomotive. At the point of unloading the rails are pulled off the rear of the flat-car train by a cable—two at a time. A special clamp assembly securely ties the ends of two rails together and is so designed that it tightens on the rails as the road is put on the pulling cable. The cable extends from the winch of a locomotive crane, which, with its brakes set and its wheels blocked, acts as a dead-man—holding the two rails immovable as the flat-car train is pulled out from under them.

Unloading and Laying Procedure

The rails are unloaded in the center of the track, and immediately after each pair is off the cars the locomotive crane moves ahead progressively and, with successive grabs about 100 ft. apart, sets them out on the track shoulder—both at the same time—employing two safety rail tongs.

Actual laying of the long strings is done subsequently by a specially organized rail-laying gang, employing Nordberg power spike pullers and adzing machines, a rail crane, a Woolery creosote sprayer, and a Nordberg power spike driver. The first operations involve setting the new long rails back in to the center of the track, one at a time, with the rail crane; stripping the old jointed rail of spikes, anti-creepers and joint bars; and then rolling out the old rails, one at a time, with safety rail forks. Following behind the removal of the old rails, treated tie plugs are driven into the old spike holes, the ties are adzed, the newly-adzed surfaces are sprayed with creosote, new 14-in. by 7¾-in. double-shoulder tie plates are set in place, and the new rail is then lined over into position and gaged and spiked. Subsequently, adjoining lengths of the welded rail are field-welded together to eliminate all rail joints between insulated joints or other necessary breaks in the track.

The long rails are anchored with standard cut spikes and compression-type rail anchors, the anchors being used only on the inside of the rail, on every fourth tie, except near the ends of the continuous lengths. In single-track territory the rail is anchored at all ties for a distance equivalent to six 39-ft. rail lengths each way from a joint. In double-track territory, near its ends, each continuous length is anchored at every tie for a distance of four rail lengths in the direction of traffic and for eight rail lengths against traffic. The longer stretches of rail — in excess of about 6,000 ft. — are also fully anchored for six to eight rail lengths near the center.

The laying of continuous welded rail on the E. J. & E. is under the general direction of F. G. Campbell, chief engineer.

Some of the largest timbers ever hauled by the Atlantic Coast Line were loaded recently at Jericho, S. C., where the Dimensional Timber Company has its mill. The picture above shows 70 ft. timbers, 14 in. by 14 in., being slid onto a flatcar

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Numerous proposed solutions of the railroad problem are then passed in review. It is discovered that, while some are strongly tainted with self interest, there has existed a rather general belief that the real solution could be found by political action for the reason that the problem itself has a political rather than an economic origin. The proposals can be boiled down, very largely, to "equality in regulation."

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The author holds the opinion that the National Transportation Policy in the Transportation Act of 1940 as a means of achieving equal regulation is "illusory," and doubts "whether substantial equality of opportunity among agencies of transportation is possible of attainment merely by what is now equivocally known as 'equality of regulation'." The existing situation, in his opinion, demonstrates that fact. Furthermore, regulation extends further in railroads than in other agencies, and includes the privately financed roadway, and all the service offered by railroad is for-hire while only a part is for-hire by highway, water and air. Some means in addition to mere equality in regulation is, therefore, required.

Dr. Lyne then brings up the concept of "integration," wherein one agency may freely engage in operating other agencies. It is claimed, he says, that by this means whatever subsidy, government aid or other advantages may arise from government promotion and fostering of highways, waterways and airways, the railroads can share in them by their use of such facilities, as well as offering the public a variety of services. He then points out the fact that even though a railroad may thus improve its financial standing as a corporation by sharing in government largesse, this would in no way tend to secure capital funds for its rail fixed-plant — which is the essential issue.

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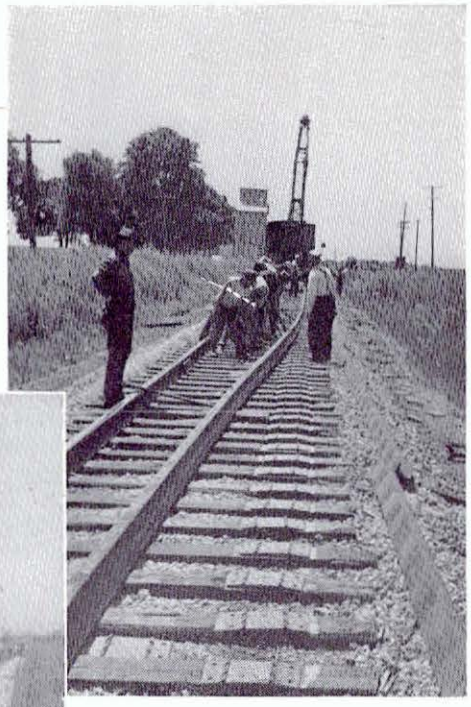
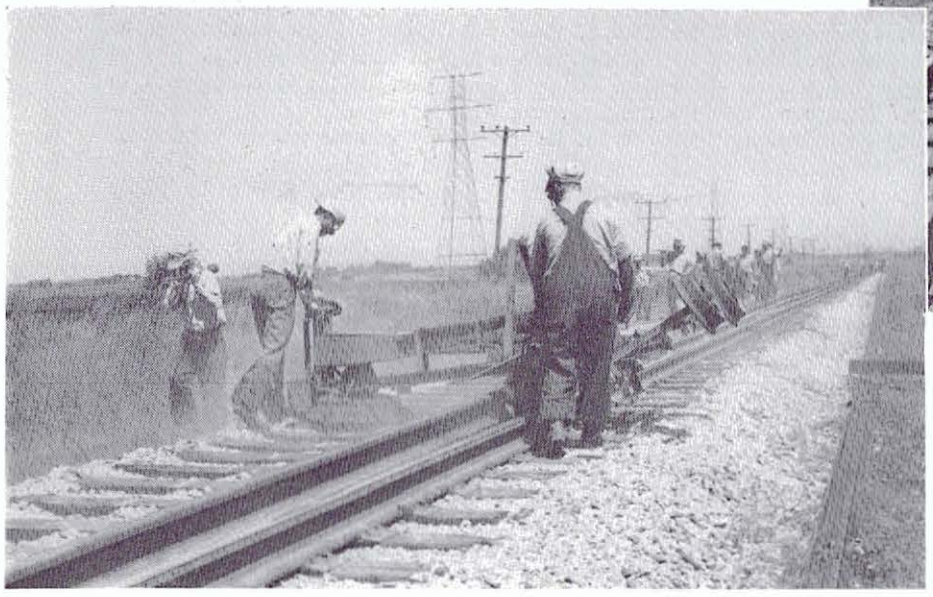
Right—Lining the continuous rail over into position on the new tie plates



Below—Power-adzing the old tie plate seats, preparatory to placing the new larger tie plates



ing by a Baldwin 2,000-hp. Diesel-electric road locomotive. At the point of unloading the rails are pulled off the rear of the flat-car train by a cable—two at a time. A special clamp assembly securely ties the ends of two rails together and is so designed that it tightens on the rails as the road is put on the pulling cable. The cable extends from the winch of a locomotive crane, which, with its brakes set and its wheels blocked, acts as a dead-man—holding the two rails immovable as the flat-car train is pulled out from under them.

Unloading and Laying Procedure

The rails are unloaded in the center of the track, and immediately after each pair is off the cars the locomotive crane moves ahead progressively and, with successive grabs about 100 ft. apart, sets them out on the track shoulder—both at the same time—employing two safety rail tongs.

Actual laying of the long strings is done subsequently by a specially organized rail-laying gang, employing Nordberg power spike pullers and adzing machines, a rail crane, a Woolery creosote sprayer, and a Nordberg power spike driver. The first operations involve setting the new long rails back in to the center of the track, one at a time, with the rail crane; stripping the old jointed rail of spikes, anti-creepers and joint bars; and then rolling out the old rails, one at a time, with safety rail forks. Following behind the removal of the old rails, treated tie plugs are driven into the old spike holes, the ties are adzed, the newly-adzed surfaces are sprayed with creosote, new 14-in. by 7¾-in. double-shoulder tie plates are set in place, and the new rail is then lined over into position and gaged and spiked. Subsequently, adjoining lengths of the welded rail are field-welded together to eliminate all rail joints between insulated joints or other necessary breaks in the track.

The long rails are anchored with standard cut spikes and compression-type rail anchors, the anchors being used only on the inside of the rail, on every fourth tie, except near the ends of the continuous lengths. In single-track territory the rail is anchored at all ties for a distance equivalent to six 39-ft. rail lengths each way from a joint. In double-track territory, near its ends, each continuous length is anchored at every tie for a distance of four rail lengths in the direction of traffic and for eight rail lengths against traffic. The longer stretches of rail — in excess of about 6,000 ft. — are also fully anchored for six to eight rail lengths near the center.

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CAN THE RAILROADS BE

By Dr. C. S. DUNCAN
Economist, Association of American Railroads

This review of the dissertation by my colleague, J. G. Lyne, on the railroads' needs for fixed-plant capital, was not solicited, but was written by Dr. Duncan on his own initiative. I am very glad to publish what Dr. Duncan has written, because I believe with him that this monograph is a significant contribution to clearer thinking on the problems of the railroads, and of the country. F. A. Korsmeyer, reviewing this book in the Wall Street Journal of August 13, says the author "has come close to breaking new ground in the field of transportation economics."

Mr. Lyne disavows any pretension that he is "a one-man 'study board,' with a dogmatic solution to all the railroads' difficulties" — but the implication of his discussion is that there are compelling reasons why the railroads should consider concentrating their interpretation of their needs in terms of the public interest in maintaining an adequate inflow of new capital into the business. It is an immense and probably impossible task to educate the public into all the complexities which confront the railroads — but all of these can be readily summarized and understood when attention is directed to their adverse effect on the price of railroad securities and to the brake they put on the inflow of new investment into the industry.

Nobody connected with Railway Age *wants to see the railroads financed by taxation — as highways, waterways and airways are financed — but it would certainly do no harm for railroad people to call to the attention of advocates of unlimited expenditures on these socialized transportation facilities the important point Mr. Lyne makes, namely, that it would be very easy indeed for the government to use the precedent of its grade crossing expenditures and appropriate tax funds for improvements to railroad plant. Patrons of highway, waterway and air transportation have no more "inherent" right than railroad patrons to pass along a large part of their transportation bills to the taxpayers, and continuance of the subsidization of competing means of transportation ultimately will necessitate subsidization of the railways.*

Samuel O. Dunn

James Garnett Lyne, an editor of *Railway Age*, has recently had conferred upon him, by New York University, the degree of Doctor of Philosophy. In partial fulfillment of the requirements for this degree Dr. Lyne wrote a thesis with the non-streamlined title, "The Need of the Railways for Additional Fixed-Plant Capital and Possible Means of Its Attainment," published by Simmons-Boardman Publishing Corporation, New York.

Those who know Dr. Lyne, and they are many, need no advice; those who do not know him should be advised that he is a man of wide knowledge in railroad matters, of good judgment, bold and courageous in his thinking, and with facility and felicity of expression. What he has to say can be readily understood and is well worth careful consideration.

The title of Dr. Lyne's thesis, which is to be briefly reviewed here, though not streamlined, has the decided merit of stating clearly the theme to be developed. What he undertakes to do, and actually does, is to set forth his well documented reasons, cogently and buttressed by facts, why he believes that over and beyond every other factor in importance, the railroads need new capital for investment in fixed plant; that the needed capital is not now to be had, and the reasons why this is so; and finally what may be done about it.

Performance Outruns Facilities

The first point that Dr. Lyne takes up is the need for capital for fixed-plant improvement. The data he uses cover the period 1916-43, but emphasis is placed upon the period between World War I and World War II. Some figures are included for 1944 and even 1945, but evidently the text was drafted at a time when the latest figures were not available and were afterwards inserted. The point he stresses is that the "miracle" performance of the railroads in War II was made possible by the capital investment in road, in the period 1920-29, the great benefits from which were realized after the period of depression, 1932-40. He shows that each ton of freight-carrying capacity produced roughly 3,900 revenue ton-miles in 1916 and 4,200 in 1929, an increase which he attributes "in part at least, to the increase of $8 billion total investment which occurred in the intervening years." This figure increased to 8,170 ton-miles in 1943, although only $1 billion in total investment had been added, 1929-43. (Table I, p. 7)

From an original graph (Chart A, p. 6) Dr. Lyne draws the conclusion that the railroad performance has greatly outrun facilities. This situation leads to the bold inquiry as to whether or not the nation needs to have the railroads sustained in such great capacity as the performance indicates. Upon an analysis of this matter he concludes that, as to freight, the country "must count heavily" on the rail carriers in time of war, and that the prewar, peacetime period indicated a stabilized condition in which there was reliance upon the railways "for upwards of 60 per cent of the nation's freight traffic." While there was a tremendous increase

ADEQUATELY FINANCED BY PRIVATE INVESTORS?

A review of a monograph by one of the editors of this paper, which seeks to translate what the railroads need into terms of the public's interest in efficient transportation

in rail passenger traffic, 24.7 billion passenger-miles in 1940 as compared with 97.7 in 1944, the former figure was only 8.7 per cent of total travel and the latter only 34.6 per cent. The data suggest to the author that, in peacetime at any rate, "the volume of railroad travel could be shifted to other agencies" and thus make no additional capital investment necessary.

If the capital investment in the period 1920-29 accounted only in part for the miraculous performance of the railroads in War II, what was the other factor? The other factor the author calls managerial control, or the "human organization" as contrasted with the physical plant. Dr. Lyne develops at some length "the collaborative system developed among the railroads, the armed services, the regulatory agencies and civilian shippers and receivers of freight." The essential principles that were developed are that no freight shall be loaded on a car for shipment unless and until preparation has been made for its receipt and prompt unloading and that foreknowledge to the extent possible be obtained of what the transport job is, so as to avoid unnecessary duplication of car orders and to enable the carriers to assemble the required equipment. This collaborative system involves the Car Service Division of the Association of American Railroads, the Shippers Advisory Boards, and cooperative relationship with the military authorities and regulatory bodies.

Why Is Railroad Credit Weak?

The challenging thought is expressed by Dr. Lyne that "the achievement possible through managerial control, with the existing railroad plant as 'given' — plainly reached its zenith in 1944" (p. 28). This is startling. What convinced the author was that car shortages began to appear in that year. No doubt, if the conclusion had been reached in 1948, the "zenith" would have been loftier. It is impossible to set a definite limit to what may be accomplished by willing, intelligent, thoroughgoing cooperative effort by human beings. On the other hand, there must somewhere, some place be a limit. The "impossible" may be done, but it is still within finite limits. Sustained efforts cannot be secured where the facilities to work with are continually being worn out or are growing obsolete, and are not restored. The point is well taken.

If, then, the railroads, having fully exploited the possibilities of managerial control, find themselves in need of capital for plant improvement, if their service, so far at least as freight is concerned, is indispensable in time of war and is the mainstay of the country's economic well-being in time of peace, as evidenced by the facts and as proclaimed by military and government officials, students of transportation and the shippers themselves (cf. pp. 146-7), and if the earning power of the rail carriers has been demonstrated in recent years — why do not the railroads have a better credit rating in the money market?

This is a question which Dr. Lyne undertakes to investigate. He finds the darkest gloom as to the future of railroads in the depression years, and the blackest foreboding expressed in an investment survey made by Poor's Publishing Company in 1935, which stated in effect that adverse forces operating against the railroads were "chronic," might be temporarily relieved but were irresistible in the long run and the railroads would be "superseded by automobiles and buses." Stock prices reflected this mood. War II, however, changed all this but did not restore investor confidence.

The Need for Fixed-Plant Funds

There has never been any difficulty, the author finds, about equipment trust certificates and money at advantageous rates has always been available for cars and locomotives. This is not true of capital needed for improvement of plant.

In seeking for an explanation of this situation Dr. Lyne finds that there are factors and influences which are beyond the control of management. Do these explain the unpopularity of railroad investment in plant in the money market? They are rate levels, wages and working conditions, and taxes. He undertakes to ascertain whether and to what extent they may be undermining the credit standing of the railroads.

A detailed review of rate changes and the general attitude of the Interstate Commerce Commission for the period between the wars and in War II has been made by Dr. Lyne. In fair weather and foul, he finds the commission sympathetic to carrier needs. Little is made, however, of the "economic lags" due to the length of time required to secure a decision. As a result of his survey, the author finds nothing "which would indicate that the 'railroad problem' (which, as here considered, is the question of getting capital funds adequate to continuing modernization of railroad plant) either can or will be solved by action on the general level of rates." (p. 75)

Certain suggested changes in rates and rate-making practices are then examined in order to see if they offer an adequate solution for the problem. The first suggestion examined is the repeal of the long-and-short-haul clause in section 4 of the Interstate Commerce

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is especially noteworthy in comparison to that of other industry, and that is the fact that a railroad being privately owned is taxed but its competitors use a roadway that is untaxed. There are inequities in payroll taxes also. But, all told, these matters cannot account for the lack of credit standing from which the railroads suffer.

He traces in much detail the changes in wage rates between War I and War II, and during War II. While he finds much to criticize, especially the breakdown of the Railway Labor Act, the decisions of the Adjustment Boards, the seniority rules and the indifference of the older men as to what may happen to the younger men, and the ruthless exploitation by union leaders of their political strength, he comes finally to accept the results of a study made by J. L. McDougall of Queens University, which in effect are that the number of employees varies inversely with the rates of wages per hour and directly with operating revenues. Consequently, the ratio of employee compensation to gross revenue remains fairly constant, oscillating narrowly around 48 per cent.

Can Subsidies Be Limited?

The analysis of the situation is now complete. There has not been anything in the decisions of the commission on rates, nor in the competitive situation as it has so far developed, nor in the labor relationship between employees and management, that may be considered as an adequate cause of the poor credit standing of the railroads. None of the many proposed solutions for the railroad problem, whether based upon equality of regulation or integration of facilities, has been found effective or possibly can be made effective.

Dr. Lyne is now ready to offer his own reason for the lack of good credit standing on the part of the railroads. He divides the subject into two parts; one is the reluctance on the part of investors to supply new capital by purchasing railway securities and the other is the reluctance of railway management to sink capital into fixed plant, even when it is available. Why is this the case? He answers: "There appears to be nothing to explain the persistence of railway stocks at prices so much below those of other industry (and reluctance of railway management to commit themselves to large capital outlays on fixed plant) except the fear of greatly increased competition from other forms of transportation. There is nothing in the aspect of the competitive prowess of these other forms of transportation (save, perhaps to some degree, the airplane) which appears formidable, except the prospect of further uncompensated expenditures of public funds of large but unpredictable magnitude." (pp. 154-5) To this he adds that this is "the principal if not the sole cause of persistent poverty of railroad credit for capital expenditure on fixed plant." (*ib.*).

He clarifies the idea somewhat by saying that there is little or no difficulty about government expenditures for the improvement of farm roads, or of roads for local short-haul use. Government and motor vehicle users have not been content with this but have gone on and are now in the midst of a great super-highway program which raises concern about the future expansion of long-haul highway facilities. Expenditures by government are also being made for improved waterways and for airways. It is this *further* and *unpredictable* amount of uncompensated public expenditure that gives investors pause and inhibits rail management.

As to what should be done about it, Dr. Lyne has the following to suggest:

"1. Limit capital outlays on *future* long-haul highways of the 'super' category to those which can be financed by tolls levied upon users.

"2. Retain present fees for highway use at approximately present levels on the average.

"3. Set some *dependable* limitation beyond which the size of vehicles using the public highways will not be permitted to go.

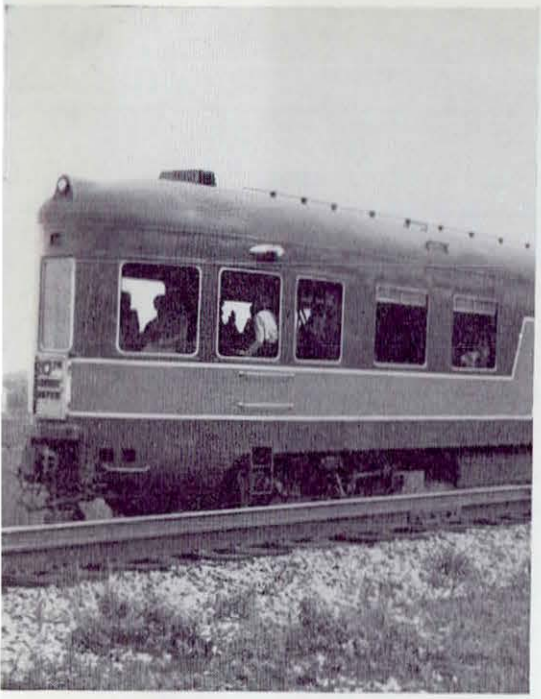
"4. Limit capital outlays on *future* improvements to navigation to those which will be supported by tolls levied upon users.

"5. As to air transportation, some public assistance is probably inevitable, and justifiable in the interest of national defense . . . To extend . . . it should be governed by a generally accepted formula (i.e., public aid never to exceed a certain fixed percentage of total outlay)" (p. 156).

As alternatives to this program, if government expenditures cannot be limited, as in private enterprise, to what the users are willing to pay for, Dr. Lyne offers either the plan proposed by the National Resources Planning Board, i.e., the government to own and maintain the roadway for railroads and lease it to operating companies, or the direct appropriation of funds by government for roadway improvement to corporation owners on some matching or other equitable basis, as is now being done with respect to rail-highway grade crossings.

Finally, in facing the remaining alternative, government ownership and operation of the railroads, Dr. Lyne says, "Whether the economy should be more widely socialized or not is a question beyond the scope of this inquiry" (p. 161). He adds also that, publicly owned or privately owned, "national interest demands an enlargement of the supply of capital for improvements to fixed plant of the railways." (*ib.*).

Five winners of the Chesapeake & Ohio's $5,000 essay contest received a ride in a locomotive cab among their prize awards



NEW "CENTURY" INAUGURATED BY

Above left—The raised platform lookout lounge-observation car

Left—Lounge section of the club car showing the bleached walnut paneling, mirrored walls and fluorescent lighting

Above—Each double bedroom on the train has an adjoining private lavatory and toilet room

Left—A passenger who has just enjoyed a shower bath en route

Below left—At the left in this view is the train telephone operator in the office of the train secretary, who is taking dictation from a passenger

Below—View to the rear of the lookout lounge-observation car showing the raised platform and the extra high windows

NEW YORK CENTRAL

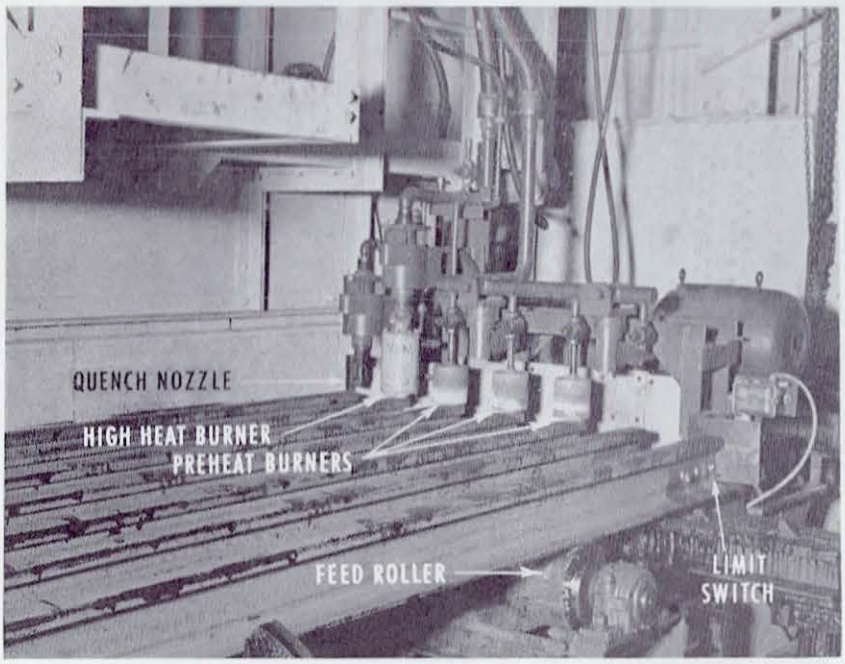
The center section of the full-length diner offers continuous serpentine sofa seating arrangements

The first run of the New York Central's new "Twentieth Century Limited" was made on September 17. Placed on public view on September 16 in New York and Chicago, the all-room, 16-car twin trains, designed by the Pullman-Standard Car Manufacturing Company in cooperation with the road's equipment engineering department, had been christened the previous day in simultaneous ceremonies in both cities. General Dwight D. Eisenhower was the principal speaker at the New York christening and Governor Dwight H. Green of Illinois performed a similar role in Chicago.

One major innovation on the new twin streamliners is what is described as the world's longest stretch of train-radio-telephone service, in operation over the 436-mi. between New York and Buffalo. Passengers in either direction may telephone any place in the world, through links with "land" radio stations, largely those of the Bell system. Later, as more radio-telephone relay stations are built, this service will be extended between Buffalo and Chicago. The radio-telephone is located in the club car, in the center of the train, which also features a completely equipped barber and valet shop, with shower bath, a train secretary's office and lounge facilities with buffet.

Other new features on the trains, each of which carries 44 crew members, include pneumatically operated car-to-car doors that swing open at a touch and close automatically, inter-car dial telephone service, complete fluorescent lighting and a raised platform lookout lounge-observation car with extra-high windows. The all-room sleeping cars have circulating ice water in every room and each of the double bedrooms has an adjoining private toilet and washroom. Passengers may control air-conditioning and heating to their individual tastes. (A description of the new "Century" will appear in an early issue of *Railway Age*.)

Lighting in the roomettes, as elsewhere on the train, is of the direct-indirect fluorescent type



A group of rails receiving the end-hardening treatment. The equipment includes a similar set-up for treating the opposite ends simultaneously

MILL PROCESS FOR END-HARDENING RAILS

A new process for hardening the ends of rails at the mill has been developed by the Bethlehem Steel Company at its plant at Steelton, Pa., after more than a year of investigation and experimentation with various methods and procedures, in cooperation with suppliers of heating equipment. Another year of engineering and pilot-plant development was necessary before production could be started on a commercial scale. To date, over 30,000 rails, including sections 100 RA, 100 PS, 112 RE, 115 RE, 130 PS, 131 RE, 140 PS, 152 PS and 155 PS, have been end-hardened by this method, representing shipments made to eight different railroads.

The first unit placed in operation did not provide sufficient capacity for the entire mill production at the Steelton plant. However, now that more than a year's operation of the unit has demonstrated that the method and the design are correct, additional facilities are being installed to meet the demand for end-hardened rails.

The unit developed for the end-hardening of the rails consists of a bed on which the rails are moved automatically both laterally and longitudinally in such a maner that each end of a rail passes under a group of burnrners (three pre-heat burners and one high-heat burner) and air-quench nozzle. Thus both ends of each rail are hardened simultaneously.

The heat-treating procedure is applied to new rails after the ending and drilling operations have been completed. Consecutive rails are mechanically positioned on skids preparatory to moving under the pre-heat burners. The longitudinal location for pre-heating is precisely controlled by moving feed rollers and a positioning switch. A hydraulic system then moves the rails laterally at specific predetermined intervals through the three stages of pre-heating burners, then to high heat, which governs the quenching temperatures, then to the air-quenching stage, and finally to the inspection beds. The high-heat burner and the quenching nozzle are suspended by individual supports, which have only a horizontal motion, thus, it is said, insuring a uniform pattern of hardness regardless of minor variations in the length of the rails.

The heating equipment consists of a carburetor which mixes coke-oven gas and air in a definite ratio; three radiant- cup pre-heaters; a specially-designed high-temperature burner. and the necessary gages and tubing. Through these units heat is transferred to the heads of the rails without flame and in such a manner that overheating and scarfing are said to be impossible. Automatic controls, insuring constant heat transfer to the rails, together with uniform pressure of dry air for quenching, and elimination of the personal element, are said to result in a uniformity of hardness and of the hardness pattern.

Rails hardened by the method described are reported to have shown no evidence of chipping or spalling after being subjected to 60 million tons of traffic in a test track over a period of one year. They are said to have shown consistant hardness values well within the range of Brinell hardness for the running surfaces of rails as recommended in the Twelfth Progress Report by the University of Illinois engineering experiment station to the American Railway Engineering Association. A table in the report gives typical hardness readings made on rails treated at the producing unit, which are considered representative of every-day practice.

The Rib-N-Rite applied to a standard typewriter

RIB-N-RITE

An attachment for any standard make typewriter, said to make as many as five ink type copies, similar in appearance to the typed original, at one time, has been announced by the Ribbonwriter Corporation of America, P. O. Box 1217, Fort Lauderdale, Florida. The use of carbon paper is eliminated. Ribbons are similar to, and handled in the same manner as, the ordinary typewriter ribbon. No alteration is necessary to any standard typewriter in order to apply this device. According to the manufacturer it can be installed in a few minutes without taking the machine from the typist's desk. Durability of this equipment is estimated at ordinary typewriter life.

GENERAL NEWS

Review of Injunction Asked of High Court

3 op unions which threatened to strike in May press appeal

The three operating brotherhoods, whose May 11 strike threat resulted in government seizure of the railroads, this week asked the Supreme Court of the United States to review the permanent injunction which Justice T. Alan Goldsborough of the federal district court for the District of Columbia issued in July to restrain the unions and their leaders from staging a walkout. The injunction, the unions said, should be reviewed by the high court before an opinion is rendered by the Court of Appeals for the District of Columbia, before which tribunal the case is now pending. The proceeding was taken to the appellate court by the government following the refusal by Justice Goldsborough on July 29 to dismiss the injunction.

Asserting that the public interest will be promoted by a "prompt settlement" in the Supreme Court of the questions involved in the proceeding, the unions —the Brotherhood of Locomotive Engineers, the Brotherhood of Locomotive Firemen & Enginemen and the Switchmen's Union of North America—said they feel that they are entitled to know "in this case, and for future cases, whether they have the right to strike or whether that fundamental right has now disappeared." Such a decision, they added, can be given in the "final and authoritative form now required" only by the Supreme Court.

"The right to strike," the unions' petition continued, "is an important right recognized by the courts and Congress alike as necessary to enable workers to exercise liberty of contract in bargaining with their employers. The injunction granted here has already deprived thousands of employees of that important right. If the decision below stands, it means that railway employees are to be denied that right which employees in other industries are still guaranteed. For, under the decision here, whenever there is a threat to strike in the railroad transportation system, the government may properly sue to enjoin the strike.

Four Questions

"An injunction, even for a short time, substantially reduces the value of the right to strike. This has been recognized by Congress in its denial in the Norris-LaGuardia Act of jurisdiction in the federal courts to issue either temporary or permanent injunctions in all cases growing out of labor disputes, and particularly in section 10 of that act which provides for 'the greatest possible expedition' in the review of even orders granting temporary injunctions in such cases."

The case, the unions said, presents four questions: (1) whether the Norris-LaGuardia Act deprives a district court of jurisdiction to grant an injunction against a "peaceful railway strike" arising out of a labor dispute between the private carriers and their employees; (2) whether there is any basis for equitable relief to enjoin a "non-violent" railway strike, in view of the provisions of the Railway Labor Act and the Taft-Hartley Act, which, the brotherhoods contend, demonstrate a congressional policy against the exercise of injunctive power in such a case; (3) whether the Taft-Hartley Act, which the district court relied upon to sustain venue, applies in view of the provisions of that act which exclude from its operation employers, employees and labor organizations subject to the provisions of the R.L.A.; and (4) whether the permanent injunction granted by the district court is "broader" than "justified by the conduct found unlawful."

The unions described as "squarely inconsistent" with the Supreme Court's decision in the so-called mine workers case—*United States* v. *Mine Workers*, 330 U.S. 258—the finding of Justice Goldsborough that, even if there had been no government seizure of the railroads, the Norris-LaGuardia Act does not apply to "a situation where the entire transportation system of the country would be stopped." Justice Goldsborough's ruling, they said, is to the effect that, even in purely private labor disputes, the government can secure an injunction in any case where, in the opinion of the court, the effect upon the nation is sufficiently serious.

The unions also held to be unsound Justice Goldsborough's reasoning that railroad employees, immediately upon government seizure of the carriers, became government employees, thereby resulting in the pending case being controlled by the mine workers proceeding. In this connection, the brotherhoods said that executive order under which the government seized the railroads not only contained "no express provisions" for negotiations between the government and the railroad employees, but "on the contrary provides that government operation is not to prejudice 'the effectiveness of such retroactive provisions as may be included in the final settlement of the disputes between the carriers and the workers.'"

Justice Goldsborough's findings, the unions continued, also demonstrate the "whole theory" of the government—that seizure and injunction may be utilized and limited to forcing the settlement of a purely private labor dispute. "We think it clear," they added, "that the railway workers did not become employees of the government, that there was no labor dispute between the government and the employees, that this case involves and grows out of a private labor dispute between the carriers and workers, and that therefore the bar of the Norris-LaGuardia Act against injunction is fully operative.

"The workers did not become public employees merely upon the assumption of possession and control of the railway systems by the government. The Act of August 29, 1916, [under which authority the government seized the railroads] authorized seizure of property, not of employees. It is not a compulsory draft law. And mere seizure of property does not establish the personal relation of employer and employee. . . . The question here is whether the government, which under the Norris-LaGuardia Act is not entitled to an injunction in a purely private dispute, can circumvent that congressional inhibition simply by seizing property and nothing more. . . . In any event, the case presents a question of substance relating to the construction of a federal statute which has not been but should be decided by this court."

"No Wrongdoing"

With respect to Justice Goldsborough's conclusions that there was a cause of action in equity because the threatened strike would imperil interstate commerce, mails and national health and safety and that neither the R.L.A. nor the Taft-Hartley Act precluded issuance of an injunction, the unions said they believed no equitable cause of action was shown for the reason that their attempt to call a "peaceful and non-violent strike" involved no wrongdoing. Moreover, they added, Congress, in both acts, has "plainly withheld" authority for the exercise of injunctive process in cases such as the one pending.

The unions pointed out that the venue provisions of Section 301 (c) of the Taft-Hartley Act exclude labor organizations representing railway labor subject to the R.L.A. "This new provision concerning venue in the case of

suits involving labor organizations represents a major change in the law," they remarked. "It is a matter of substantial importance which is likely to arise in a number of future cases. We think it is clear therefore that it is a question which should be reveiwed by this court."

Turning to that provision of the injunction enjoining the brotherhoods from encouraging, ordering, engaging in, or taking part in a domestic railroad strike or from interfering with or affecting the orderly continuance of work of the railroads, or from taking any action which would interfere with the district court's jurisdiction, the unions said that while they agree with Justice Goldsborough that the injunction must be construed with reference to the issues it was meant to decide, it should not be so "sweeping or ambiguous" as even to seem to put them in peril of contempt proceedings for conduct unrelated to those issues. "We think it is clear," they added, "that this injunction is broader than necessary to restrain the conduct found unlawful or to prevent recurrence of that conduct, and therefore amounts to an abuse of the district court's discretion."

Air Forwarding Rights Denied Rail Affiliates

Subsidiaries of I. C., C. & O., and Erie rejected by C. A. B.

Applications of two railroad affiliates—Mississippi Valley Transportation Company, a wholly-owned subsidiary of the Illinois Central, and National Air Freight Forwarding Corporation, controlled by the Chesapeake & Ohio and Erie—for authority to operate as indirect air carriers in transportation of property by air have been denied by the Civil Aeronautics Board.

At the same time, however, the board authorized 55 other air freight forwarders to engage in such operations for a period not to exceed five years.

With respect to Mississippi Valley, the C.A.B. noted that its air freight forwarder operations, if authorized, would, for the most part, be conducted by personnel of the I.C. and through facilities of that road. The railroad, it said, at one time considered the advisability of seeking authorization to engage in air transportation as a direct air carrier, but later reached the conclusion that air freight forwarder operations would serve its purposes and meet the requirements of its shipper customers.

The entrance of Mississippi Valley into the air freight forwarding business in the area served by the I.C., the C.A.B. found, would create a "serious handicap" to independent air freight forwarders seeking to compete for that business. It added that I.C. freighthouses would be used for handling air freight forwarder traffic and that all resources of the I.C., including its "extensive facilities" for solicitation of traffic, would be available to the applicant.

See Railroad Control "Detrimental"

"Moreover," the C.A.B. continued, "railroad control of Mississippi Valley presents a potential conflict of interest between air and rail operations of the parent company which might prove detrimental to full development of the air services. Unlike the independent surface forwarder who has only a relatively small investment and most of whose properties can be adapted to air as well as surface operations, the railroad has large fixed investments in property and equipment not capable of use in air services. As a result, there exists an incentive for the rail parent to strive for development of its rail business at the expense of full and whole-hearted promotion of air transportation."

The stock of National Air Freight Forwarding is owned by National Carloading Corporation, a surface forwarder whose stock is held indirectly by the C. & O., the former Pere Marquette, and the Erie. "The ultimate result," the C.A.B. said, "is that the applicant is owned and controlled by three railroads which together comprise a great sector of the railroad industry in the United States."

In disposing of the National Air Freight application, the C.A.B. said that while that forwarder is not dependent upon facilities and personnel of railroads controlling National Carloading, it expects to use the facilities and personnel of the latter corporation and "it may be expected also that the facilities of the controlling railroads, especially in the solicitation of traffic, will be used to the advantage of this applicant." The facilities thus available to the applicant, the board continued, would give it a competitive advantage over other air freight forwarders, particularly those who will operate independent of any surface affiliations.

Express Agency Allowed to Continue

The C.A.B.'s order also authorizes the Railway Express Agency to continue to engage in transportation of express by air. At the same time, the R.E.A. was directed to negotiate for revised air express agreements with those air carriers which now are parties to such agreements or which during the following six months may enter into agreements similar to those now in effect.

With respect to the R.E.A., the board, in the course of its 82-page opinion, found no indication that the railroads, through their ownership of all of R.E.A.'s stock and control of its directorate, have "inhibited or restricted" air express operations to date. The agency, it said, has joined with air carriers in authorizing expenditure of large sums of money from gross air express revenues for advertising and promotional purposes and, within its own organization, has actively and consistently encouraged solicitation and development of air express. "The present volume of air express business and its continued steady growth provide convincing evidence that railroad ownership and control of R.E.A. has not been inconsistent with the public interest," the board said, "and no tangible evidence has been adduced which would support apprehensions as to the future."

One member of the board, H. A. Jones, filed a dissenting opinion. The

A 66-ton Whitcomb Diesel-electric locomotive being loaded aboard ship en route to Bahia, Brazil

operations of air freight forwarders, he said, will (1) slow down air freight transportation, and thus tend to destroy its greatest advantage—speed; (2) limit utility of cargo space on airline passenger schedules; (3) reduce air carrier revenues without materially reducing costs; (4) make lowering freight rates more difficult; (5) generate little new traffic; (6) provide unneeded and uneconomic additional competition for air traffic; (7) unnecessarily complicate the air freight transportation system; and (8) provide the C.A.B. with an "impossible" administrative problem.

"I wish to point out," he commented in part, "that freight forwarders developed in the rail transportation field only because the railroads failed to provide a satisfactory service for handling of less-than-carload freight . . . . The lack of interest by the railroads in handling l.c.l. traffic themselves is understandable, since it amounts to but two per cent of their business and never was profitable. The conditions which led to establishment of forwarders in the rail field do not obtain in air transportation. Less-than-planeload traffic is 98 per cent of the air freight transportation business, and the carriers not only are willing, but anxious to do the business themselves, without the interposition of a middleman."

Mr. Jones said there is "no sound reason" why the air lines should not have been permitted and assisted to organize a subsidiary organization patterned after the R.E.A. to perform all of the services needed in the transportation of property by air. "At the same time," he added, "the R.E.A., if the board thought competition necessary, might have been permitted to make its services co-extensive with that of the air lines' own agency, providing competitive stimulus to both which would have resulted in real advantage to the public."

Radio-telephone service became available on the New York, New Haven & Hartford's "Merchants Limited" and "Yankee Clipper" on September 17. (See *Railway Age* of September 11, page 81). One of the installations on the trains is shown above. At left is the operator who makes and receives calls, which are then switched to the passenger in an adjoining booth

Finds Freight Traffic Being Diverted to Trucks

Commerce Department survey notes drop in rail movements

Studies indicating that the trucking industry not only has captured a share of the tonnage formerly handled by railroads, but has succeeded in obtaining for itself an increasing percentage of new tonnage, are set out in a report, "An Evaluation of Motor Truck Transportation," prepared by the Transportation Division of the Department of Commerce's Office of Domestic Commerce. The report also suggests, on the basis of another study, that motor carriers are "increasingly penetrating" the longer haul area of rail movements.

The report, according to P. M. Zeis, chief of the transportation division, endeavors, to a limited degree, to evaluate development of motor transportation and indicate the inadequacy of current data concerning truck operations. "The report is admittedly incomplete since a thorough study of motor trucking would involve a major research project covering virtually every form of business in the United States," Mr. Zeis comments. "Moreover, no really complete analysis of motor trucking is now possible because the information required for such a study never has been compiled."

The presentation indicates that although the physical volume of production of manufacturers rose 75.5 per cent from 1939 to 1947, railroad movement of such commodities climbed only 13.6 per cent in the same period. "As manufactured articles constitute a large segment of truck traffic," the report says, "there is considerable likelihood that much of this form of commerce transferred to the highway."

The report goes on to note that, in lesser degree, the contrast between growth in mineral production and in mineral rail traffic reveals a similar downward trend, adding, however, that water carriers and pipe lines may account for part of the tonnage lost by railroads. It also describes as "significant" the decrease in rail movement of livestock, and points out that while production of livestock in 1947 was 38.4 per cent greater than in 1939, its railroad transportation fell 26.4 per cent during the same period. On the other hand, rail forwarding of agricultural products gained approximately five per cent more than production of farm crops.

The report then proceeds to assert that a study completed recently by the Ship Coal by Rail Committee of East Syracuse, N. Y., provides "additional fairly current evidence on the shift of railroad traffic to motor carriers." The latter survey, according to the report, was based on a combination of spot-checks and informal reports covering all freight and express traffic originating in "New York Central System territory." It indicated that trucks haul 96 per cent of intra-terminal traffic, 82 per cent of hauls ranging from 25 to 100 mi., 68 per cent of hauls ranging from 100 to 300 mi., 44 per cent of hauls ranging from 300 to 500 mi., and 28 per cent of hauls ranging from 500 to 1,000 mi.

Fewer Cars, More Trucks

"Another general measurement that adds credence to previous evidence that trucks are obtaining traffic which otherwise would be handled by other forms of transport," the report continues, "is the extremely rapid growth in number of truck registrations as opposed to the decline in the quantity of freight cars." In this connection, it observes that motor truck registration has increased almost six-fold between 1920 and 1947 in contrast to an approximate 40 per cent reduction in number of freight cars." Although truck registrations and freight car count are not fully comparable," it adds, "the offsets or qualifications are not sufficient to extinguish the fact that the number of motor vehicles would not have mounted, while freight cars diminished in amount, if shippers had not manifested their demand for highway transportation."

Another phase of the 124-page report is its conclusion that it has become "increasingly evident" to many railroad officers that the present less-carload rate level in certain regions of the country is non-compensatory. "An example of this shift in the thinking of certain railroads," the report states, "is the petition filed with the Interstate Commerce Commission in May, 1947, by substantially all eastern railroads to increase less-carload and any-quantity class rates in the territory they serve. Of particular significance to truck lines is the fact that the railroad proposal provided for a greater percentage of increase in short-haul rates than upon longer distance movements. In this connection, the railroads remarked in their petition that in formulating their new l.c.l. scale they had recognized the possibility of some diversion of traffic, particularly in the short-haul zone, where the sharpest increase would occur. The concerned eastern lines also indicated their willingness to join railroads in other territories in establishing interterritorially the same basis of rates as they proposed for their region."

Future "Far from Clear"

The report also asserts "it is evident" that future rail-motor competitive relationships are "far from clear." "In the background," it continues, "is the question of whether and to what extent motor carriers may see fit to modernize their own rate structure. Moreover, in the event rail l.c.l. rates are revised to reflect costs, there is still the open question of motor rate policy." Whether truckers will take full advantage of rail rate increases and attempt to raise their rates to similar levels — notwithstanding the fact that their costs may be

considerably under the rail expenses for the traffic and distances concerned — or tend to limit their increase in order to attract more of the competitive traffic and hold it by continuing a policy of differentially lower rates where their costs permit them to do so depends, according to the report, upon the "degree of competition between motor carriers and the ability of shippers to resort to private carriage in cases where the rates of the for-hire carriers exceed the cost of performing the service."

Another conclusion reached in the report is that the railroads are in a "much stronger position" with respect to carload traffic than they are on less-carload shipments. It referred to a study of 1939 traffic made by the Board of Investigation and Research, which, it said, indicated that truckload costs were "significantly higher" than rail carload costs for all distances in excess of 100 mi. but that trucks were able to compete for a "considerable volume" of relatively long-haul traffic because "rail rates on higher valued traffic were substantially in excess of costs of handling this type of traffic."

"These cost relationships, it should be noted," the report went on, "were based on 10-ton truckloads and 30-ton carloads. Where the carload was substantially less than 30 tons because of the nature of the commodity, the ability of the truck to compete at greater distances was enhanced. While cost relationships between rail and motor carriers have undoubtedly changed since 1939, the general pattern of cost and rate relationships between truckload and carload traffic is probably similar to that indicated by the B.I.R."

With respect to restrictions on operating authority which the Interstate Commerce Commission has imposed upon motor carriers, the report states that such limitations have influenced the volume of for-hire trucking service available and have had the effect of allocating interstate highway arteries among limited groups of designated for-hire truckers. It adds, however, that the B.I.R. study of federal operating restrictions brought out that "the resulting tendency to lessen competition and confine the scope and nature of motor carrier operations and services has probably prevented the most efficient use of trucking equipment and facilities and thereby may have had the effect of denying lower rates to the shipping public."

What Is a Private Carrier?

The report also holds it to be apparent that the question of whether or not the motor vehicle operations of an industry or merchant are those of a private carrier is not one that can be immediately ascertained under the present administrative interpretations of the "controlling provisions" of the Interstate Commerce Act.

"The commission," it said, "has indicated that every individual case must be considered on its own merits with regard to the specific facts pertaining to each operation. But it would hardly seem a practical matter to require each business concern to test its status by making application to the commission, where in the opinion of the management of such enterprises, its motor carrier operations are merely incidental to its primary business activities.

"In view of the magnitude of private truck operations and the already great administrative burden of the commission, it does not appear likely that the commission will demand that each case of interstate private transportation for compensation be submitted to it for ruling. In the meantime, however, each private truck owner who operates his vehicles in interstate commerce will be subject to the possibility that his motor carrier activities may be adjudged those of a contract or common carrier and thus require suitable operating authority, unless the commission in the interval issues a ruling as to just what does or does not constitute private carriage according to the intent of Congress when it enacted the Motor Carrier Act."

Advocates Federal Weight-Size Control

Insofar as state regulatory controls are concerned, the report concludes that it appears unlikely at this time that cooperative action will be taken by the states to collectively adopt "uniform and "more liberal" policies as to size and weight regulations affecting highway vehicles. Declaring that federal legislation appears to be necessary, the report refers to a recommendation made to the 79th Congress by a subcommittee of its Senate committee on interstate and foreign commerce urging that "Congress provide for a national system of interstate highways over which interstate commerce and vehicles employed therein may freely move, subject to such uniform minimum standards of sizes, weights and safety of operation of vehicles as will be agreed upon by a panel of engineers appointed by the President."

"Should federal control of size and weight of motor vehicles become effective," it adds, "it is presumed that the I.C.C. would require that any sizable transportation economies realized by motor carriers therefrom be reflected in the form of lower rates to the shipping public." It noted that the commission, in its 1941 report to Congress, concluded that there was an urgent need for federal regulation of size and weight of motor vehicles to enable motor carriers to render a more economical and efficient transport service.

Although there has been some "progress" toward more "uniform" and "liberal" size and weight regulations since World War II, the report continues, state "impediments" to free flow of interstate truck transportation are still widespread. "Even where state regulations . . . have been liberalized," it states, "the lack of uniform action on these standards tends to continue the handicaps to interstate movements. For example, one state may increase its gross weight allowance and leave its height or length requirements unchanged, whereas a neighboring state may increase its height limitations and leave size and weight regulations as they were."

Among other things, the report also points out that (1) motor carriers in 1946 "almost regained" their preWorld War II position by handling 7.47 per cent of total domestic ton-miles of traffic; (2) payments made by Class I railroads to motor carriers for terminal collections and delivery service increased from $17,676,344 in 1939 to $56,471,629 in 1946; and (3) "extensive" air freight services of non-certificated carriers generate "considerable" trucking activities. Like many other aspects of the report, however, statistics embodying the latter "activities" were unavailable.

ATTENDANCE AT RAILROAD FAIR PASSES 2,000,000 MARK

On the morning of September 4, a legless veteran passed through one of the turnstiles at the Railroad Fair in Chicago —the 2,000,000th customer to visit the exposition since its opening on July 20. He was awarded a round-trip, first class tour for two via the Chicago, Rock Island & Pacific to Colorado Springs, Colo., and a week's stay at the Broadmoor Hotel in that city.

At the close of business on September 13, the total paid attendance at the fair reached 2,069,940. The pageant had attracted 875,904 paying customers, and a total of 775,514 persons had ridden on the Deadwood Central narrow-gage line.

House Group Will Reopen Probe Of W.A.A.-Kaiser-Frazer Deal

Further investigation by a subcommittee of the House committee on expenditures in the executive departments into the lease by Kaiser-Frazer Corporation, of a government-owned blast furnace in Cleveland, Ohio, will be launched within the "next few weeks," it has been announced by Representative Bender, Republican of Ohio, chairman of the subcommittee. As reported in *Railway Age* of September 4, page 57, Kaiser-Frazer, as new lessee, has entered into an agreement with the former lessee, the Republic Steel Corporation, whereby the latter will continue to operate the furnace and supply the pig iron output to the plant's present customers, including car builders.

Representative Bender said there are many "unexplained facets" of the transaction between Kaiser-Frazer and the War Assets Administration, the government agency which negotiated the new lease. "I believe that it is particularly pertinent to inquire why the W.A.A. informed the Wheland Company, a large iron foundry of Chattanooga, Tenn., apparently a serious bidder for

operations of air freight forwarders, he said, will (1) slow down air freight transportation, and thus tend to destroy its greatest advantage—speed; (2) limit utility of cargo space on airline passenger schedules; (3) reduce air carrier revenues without materially reducing costs; (4) make lowering freight rates more difficult; (5) generate little new traffic; (6) provide unneeded and uneconomic additional competition for air traffic; (7) unnecessarily complicate the air freight transportation system; and (8) provide the C.A.B. with an "impossible" administrative problem.

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Insofar as state regulatory controls are concerned, the report concludes that it appears unlikely at this time that cooperative action will be taken by the states to collectively adopt "uniform and "more liberal" policies as to size and weight regulations affecting highway vehicles. Declaring that federal legislation appears to be necessary, the report refers to a recommendation made to the 79th Congress by a subcommittee of its Senate committee on interstate and foreign commerce urging that "Congress provide for a national system of interstate highways over which interstate commerce and vehicles employed therein may freely move, subject to such uniform minimum standards of sizes, weights and safety of operation of vehicles as will be agreed upon by a panel of engineers appointed by the President."

"Should federal control of size and weight of motor vehicles become effective," it adds, "it is presumed that the I.C.C. would require that any sizable transportation economies realized by motor carriers therefrom be reflected in the form of lower rates to the shipping public." It noted that the commission, in its 1941 report to Congress, concluded that there was an urgent need for federal regulation of size and weight of motor vehicles to enable motor carriers to render a more economical and efficient transport service.

Although there has been some "progress" toward more "uniform" and "liberal" size and weight regulations since World War II, the report continues, state "impediments" to free flow of interstate truck transportation are still widespread. "Even where state regulations . . . have been liberalized," it states, "the lack of uniform action on these standards tends to continue the handicaps to interstate movements. For example, one state may increase its gross weight allowance and leave its height or length requirements unchanged, whereas a neighboring state may increase its height limitations and leave size and weight regulations as they were."

Among other things, the report also points out that (1) motor carriers in 1946 "almost regained" their preWorld War II position by handling 7.47 per cent of total domestic ton-miles of traffic; (2) payments made by Class I railroads to motor carriers for terminal collections and delivery service increased from $17,676,344 in 1939 to $56,471,629 in 1946; and (3) "extensive" air freight services of non-certificated carriers generate "considerable" trucking activities. Like many other aspects of the report, however, statistics embodying the latter "activities" were unavailable.

ATTENDANCE AT RAILROAD FAIR PASSES 2,000,000 MARK

On the morning of September 4, a legless veteran passed through one of the turnstiles at the Railroad Fair in Chicago —the 2,000,000th customer to visit the exposition since its opening on July 20. He was awarded a round-trip, first class tour for two via the Chicago, Rock Island & Pacific to Colorado Springs, Colo., and a week's stay at the Broadmoor Hotel in that city.

At the close of business on September 13, the total paid attendance at the fair reached 2,069,940. The pageant had attracted 875,904 paying customers, and a total of 775,514 persons had ridden on the Deadwood Central narrow-gage line.

House Group Will Reopen Probe Of W.A.A.-Kaiser-Frazer Deal

Further investigation by a subcommittee of the House committee on expenditures in the executive departments into the lease by Kaiser-Frazer Corporation, of a government-owned blast furnace in Cleveland, Ohio, will be launched within the "next few weeks," it has been announced by Representative Bender, Republican of Ohio, chairman of the subcommittee. As reported in *Railway Age* of September 4, page 57, Kaiser-Frazer, as new lessee, has entered into an agreement with the former lessee, the Republic Steel Corporation, whereby the latter will continue to operate the furnace and supply the pig iron output to the plant's present customers, including car builders.

Representative Bender said there are many "unexplained facets" of the transaction between Kaiser-Frazer and the War Assets Administration, the government agency which negotiated the new lease. "I believe that it is particularly pertinent to inquire why the W.A.A. informed the Wheland Company, a large iron foundry of Chattanooga, Tenn., apparently a serious bidder for

the property, that no immediate disposition was contemplated at the very time the deal with Kaiser-Frazer was being rushed through outside normal channels," the subcommittee chairman said, adding that G. P. Street, president of Wheland, would be among the first witnesses to testify.

As reported in *Railway Age* of August 28, page 60, lease of the plant to Kaiser-Frazer was the subject of a hearing last month before Representative Bender's group and a Senate subcommittee headed by Senator Wherry, Republican of Nebraska. Among other things, the subcommittees were requested by the American Car Institute to inquire into "possible repercussions" upon the freight car building program which might result from the lease of the plant to Kaiser-Frazer.

Basing-Point Decision Serious To Pittsburgh, Fairless Says

The recent Supreme Court ruling which resulted in elimination of the multiple basing-point method of selling steel, which had been in effect for almost half a century, is a challenge to Pittsburgh's industrial well-being, Benjamin F. Fairless, president of United States Steel Corporation, pointed out in an address to the Allegheny Conference on Community Development at Pittsburgh, Pa., on September 14.

The steel industry grew to large proportions in the Pittsburgh district because of certain advantages to be found there, he said, stressing the fact that the cost of transporting steel to consuming markets then permitted a far-reaching disposal of tonnages. "This latter condition," he added, "has been of utmost importance, because the Pittsburgh district consistently has produced much more steel than it consumed."

The building of other steel mills between Pittsburgh and some of the most desirable steel-consuming areas placed those mills in an attractive competitive position, he said. "Increases in cost of transportation have accentuated the disadvantages under which steel produced in this (Pittsburgh) area has been laboring. Step by step, the spread between rates from Pittsburgh and those from intermediate or nearer points to various destinations has grown to such proportions that the more distant shipper is not only critically handicapped in competitive dealings, but is often practically debarred from serving certain districts."

When and as costs of transportation shrink the size of the economic marketing area, Mr. Fairless said, they tend to shrink the tonnage which can reasonably be produced in Pittsburgh to that which can supply the more localized demand. "On the other hand, were the costs of transportation adjusted to allow Pittsburgh products to continue to compete effectively, for example in such markets as New York and Detroit, the size of the area which could be serviced from this district would not be seriously impaired by delivery charges."

With the basing-point method of pricing abolished, he stated, "the delivered price of material at destinations distant from the base of supply will necessarily be higher than that prevailing nearby the originating mill." He declared that when the current high demand for steel has diminished, the mill pricing method will tend to create self-sufficient concentrated industrial areas.

Vaughan Stresses Railways' Importance to Canadian Economy

Strong and healthy railways are at the foundation of Canada's economic system, and it is important to the common welfare that they be enabled to maintain their services, were the thoughts keynoting an address delivered by R. C. Vaughan, chairman and president of the Canadian National, at a luncheon marking transportation and commercial travelers day at the Canadian National Exhibition, Toronto, Ont., September 9.

"Trucks and planes have a job to do," said Mr. Vaughan, "but it is idle to pretend that they can ever replace railways. The job is too big, the demands too variable and the cost too great. You have proof of that today in the Russian blockade of Berlin, where, with rail services cut off, the city can only be partially maintained by air transport, only on the lowest living level and at a financial cost that is patently worrying the nations involved. In this country, if the wheat crop of the west had to be moved to the Atlantic seaboard by truck the value of gasoline consumed would be greater than the value of the wheat moved."

The importance of the railway industry to the well-being and development of Canada is indisputable, Mr. Vaughan declared; for every dollar invested in railways there has been created $14 of national wealth. The railways, however, are suffering from shortages and rising costs of material and labor, and sell under a very low price-ceiling. They were granted a 21 per cent increase in freight rates, applicable from April 8, 1948, but because of exceptions on which the new rates could not be applied, the overall increase was only 13½ per cent. This financial benefit was meant to compensate for increased operating costs, but did not take into account further rises in material, labor and other costs.

"Canadian railways," Mr. Vaughan said, "will have to assume new costs amounting to over $120 million a year, and these are constantly increasing. To offset them the railways have been provided with additional revenue of $70 million a year.

"The only way railways can cut expenses is by reducing the number of employees and cutting down purchases, and to do that it would be necessary to curtail services. To do so would adversely affect nearly every community and industry in Canada."

New equipment is going into service as fast as manufacturers can make deliveries, but the railways continue to be vexed with shortages of materials. "They are doing the best they can with what they can get and what they have, and are making every piece of equipment do full duty in handling record peacetime business with few delays and dislocations. Lack of equipment is not primarily the fault of the railways. Orders have been placed for many millions of dollars worth of new equipment, but deliveries are running one-and-one-half to two years after orders are placed.

"Railways support industry and agriculture not only by providing transportation at the lowest freight rates in the world, but in the great volume of purchases which amounts to $350 million a year, covering almost every product manufactured, grown or mined in Canada. There is also the immense indirect purchasing power through railway payrolls amounting to $525 million a year; in addition, the roads spend large sums for interest, insurance, pensions, and taxes. It is safe to say that Canadian railroads spend close to one billion dollars per annum in Canada.

"The darkness of doubt obscures the position of the railway industry in Canada today and makes the future hard to determine," Mr. Vaughan concluded. "But of this there can be no doubt—the Canadian railway industry is aware of its need to the human and industrial requirements of the nation; it will continue to do its duty."

TWO RAILROADS HONORED FOR 1947 AD CAMPAIGNS

The 1947 newspaper advertising campaigns of two railroads — the Chicago, Milwaukee, St. Paul & Pacific and the Chesapeake & Ohio — are listed among the 50 newspaper advertising campaigns included in the 10th anniversary edition of the Blue Book of Newspaper Advertising, American Newspaper Publishers Association. "Final selections for the Blue Book, as in years past," the foreword says, "were made on the basis of results — the documented accomplishment of the objectives set for each campaign . . . Considered singly or as a whole, the campaigns chosen point to the growing trend toward *localization* of national advertising . . ."

City of St. Paul to Honor Faricy, Railroads at September 30 Fete

William T. Faricy, president of the Association of American Railroads, will be guest of honor when his home city of St. Paul, Minn., observes Railroad Day on September 30. On that day, St. Paul will stage a series of events in recognition of the contributions which railroads have made and are making to the economic and social life of the city. The program will be sponsored by the St. Paul Association of Commerce, and thousands of people are expected to participate in the all-day civic observance.

Among the features of the celebration will be several parades, a display of the latest railroad equipment, the operation of a children's train in the Court House Square and a dinner with a railroad motif. Mr. Faricy will be the principal speaker at the dinner. His subject will be "Our Railroads—Today and Tomorrow."

The program also includes a luncheon sponsored by the Transportation Club of St. Paul, at which Mr. Faricy will be named an honorary member of that organization, and a visit to the general offices of the Chicago, St. Paul, Minneapolis & Omaha.

New "Hiawatha" Cars Styled by Brooks Stevens

New passenger cars recently placed in service on "Hiawatha" trains of the Chicago, Milwaukee, St. Paul & Pacific, not only were built at railroad company shops, as mentioned in *Railway Age* on August 14, but the structural designs were developed by railroad engineers under the direction of K. F. Nystrom, chief mechanical officer, full use being made of the engineering skill and experience of the various material and specialty manufacturers involved. The descriptive article failed to state that expert assistance was also secured in developing the interior arrangements, decorative treatment, color schemes and general styling, including the conception and design of the Sky-Top observation lounge. This work on the new "Hiawatha" cars, as well as other Milwaukee equipment now being turned out, was done by Brooks Stevens, industrial designer and head of Brooks Stevens Associates, Milwaukee, Wis.

Freight Car Loadings

Revenue carloadings for the week ended September 11, which included the Labor Day holiday, totaled 788,700 cars, the Association of American Railroads announced on September 16. This was a decrease of 106,579 cars, or 11.9 per cent, below the previous non-holiday week, a decrease of 133,679 cars, or 14.5 per cent, below the corresponding week last year, and a decrease of 118,469 cars, or 13.1 per cent, under the equivalent 1946 week.

Loading of revenue freight for the week ended September 4 totaled 895,279 cars, and the summary for that week as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loadings
For the Week Ended Saturday, September 4

District	1948	1947	1946
Eastern	157,675	140,743	141,205
Allegheny	182,258	166,364	176,445
Pocahontas	71,913	59,837	60,298
Southern	129,981	118,367	120,206
Northwestern	146,934	135,273	123,078
Cent. Western	138,253	127,024	116,930
Southwestern	68,265	61,331	56,321
Total Western Districts	353,452	323,628	296,329
Total All Roads	895,279	808,939	794,483
Commodities:			
Grain and grain products	51,200	47,733	42,746
Livestock	11,174	14,565	9,784
Coal	179,479	156,384	166,900
Coke	14,715	12,829	12,912
Forest products	50,904	44,524	45,941
Ore	79,146	75,995	66,392
Merchandise l.c.l.	108,039	103,267	107,866
Miscellaneous	400,622	353,642	341,942
September 4	895,279	808,939	794,483
August 28	891,495	925,712	908,440
August 21	900,572	900,895	884,955
August 14	891,277	906,305	887,553
August 7	878,901	905,244	899,086
Cumulative total, 36 weeks	29,407,324	30,314,267	27,695,636

In Canada.—Carloadings for the week ended September 4 totaled 87,227 cars as compared with 84,995 cars for the previous week and 73,120 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
September 4, 1948	87,227	33,259
September 6, 1947	73,120	33,075
Cumulative totals for Canada:		
September 4, 1948	2,729,298	1,337,904
September 6, 1947	2,632,522	1,311,355

Additional General News appears on pages 96 through 99.

ORGANIZATIONS

The **Trans-Missouri-Kansas Shippers Board** will hold its fall meeting on September 29, at the Continental Hotel, Kansas City, Mo. At a luncheon to be sponsored jointly by the board and the Traffic Club of Kansas City, Joseph H. Hays, counsel for the Western Association of Railway Executives, will speak on matters affecting postwar transportation.

Among the speakers who will address the third annual convention of the **Army Transportation Association,** October 4 and 5, at the St. Charles Hotel, New Orleans, La., are: Kenneth C. Royall, secretary of the Army; De Lesseps Morrison, mayor of New Orleans; S. R. Sundstrom, president of the Pennsylvania Greyhound Lines; Major General Frank A. Heilman, chief of transportation; and Laigh C. Parker, vice-president, Delta Air Lines.

The **Southwest Shippers Advisory Board** will hold its seventy-ninth regular meeting September 22 and 23 at the Jung Hotel, New Orleans, La.

A. H. Gass, chairman, Car Service Division, Association of American Railroads, will address the luncheon meeting of the **Allegheny Regional Advisory Board** which will be held in the Roosevelt Hotel, Pittsburgh, Pa., on September 23. The rest of the program will be devoted to committee reports and a report on the national transportation situation by H. E. Stringer, assistant to chairman, Car Service Division, A.A.R.

The **Railroad Enthusiasts, New York Division,** will meet September 22 in room 5928, Grand Central Terminal, at 7:45 p.m. The guest speaker will be A. A. Weiss, traffic manager, Long Island, who will talk on progress on the Long Island.

The annual meeting of the **Society for Experimental Stress Analysis** will be held at the Hotel Commodore, New York, December 2, 3, and 4.

SUPPLY TRADE

Curtis G. Green has been appointed manager of the Chicago district office of the **Baldwin Locomotive Works,** to succeed **D. I. Packard,** whose election as sales vice-president of the **Pyle-National Company** at Chicago was reported in *Railway Age* of September 4. Mr. Green has been associated with Baldwin since 1920 in various sales and engineering capacities and has been closely associated with all phases of Baldwin's Diesel-electric locomotive activities. For the past two years he has been manager of Mexican sales.

William H. Starbuck has been appointed assistant general sales manager of the Kellogg division of the **American Brake Shoe Company,** with headquarters in

William H. Starbuck

Rochester, N. Y. Mr. Starbuck, formerly sales representative, has served in various sales capacities since he joined the company.

J. H. Williams & Co., Buffalo, N. Y., has announced the opening, on October 1, of a warehouse and sales office in Los Angeles, Calif., to be located at 2266 East 38 street. This branch will serve

California, Oregon, Washington, Nevada, Utah, Arizona, New Mexico, Idaho and western Montana. **Charles F. Coates** has been appointed western district manager in charge of the new sales office and warehouse.

Sperry Products, Inc., has moved from Hoboken, N. J., to a new plant and executive offices at Danbury, Conn.

Charles W. T. Stuart, executive vice-president of the **Safety Car Heating & Lighting Co.,** has been elected president, to succeed the late **Walter L. Conwell.** Mr. Stuart began his business career in 1908 with the Baldwin Locomotive Works. From 1909 to 1924 he worked in the motive power department of the Pennsylvania and, in the latter year, he joined Safety Car Heating & Lighting

Charles W. T. Stuart

as a sales representative. He was appointed Southeastern district manager in 1933 and also Philadelphia, Pa., manager of the Vapor Car Heating Company. Mr. Stuart was appointed assistant to the president of Safety Car Heating & Lighting in 1943, and was elected vice-president in charge of sales in 1946. He was elected executive vice-president in 1947.

J. J. Murray, who has served in various export capacities with **Hewitt-Robins Inc.** during the past 28 years, has been appointed to the newly created position of expert manager.

Allen I. Barr has been appointed western sales manager of the **American Creosoting Company,** with headquarters at St. Louis, Mo.

Charles A. Miller, who has been associated with the **Pyle-National Company** at Chicago for eight years, has been appointed personnel manager of the firm.

A. C. Monteith, whose election as vice-president in charge of engineering and research of the **Westinghouse Electric Corporation** was announced in *Railway Age* of September 4, was born in Brucefield, Ont., in 1902. He was graduated from the Queens University at Kingston, Ont., in 1923, with a bachelor of science degree in electrical engineering. In the same year, Mr. Monteith came to the United States and joined the Westinghouse East Pittsburgh, Pa., works, as a graduate student engineer in the training course. In 1924 he was assigned to the central station engineering department, becoming manager of the department in 1939. He was ap-

A. C. Monteith

pointed manager of the industry engineering department in 1941 and took over the dual position of manager of headquarters engineering departments and director of education in 1945, the positions he held at the time of his recent election.

The new duties of **Henry V. Bootes,** whose appointment as assistant vice-president of the **American Car & Foundry Co.** was reported in last week's *Railway Age,* will be to assist Frederick H.

Henry V. Bootes

Norton, vice-president in charge of the company's sales. Mr. Bootes, formerly district sales manager, New York sales district, will continue to make his headquarters in New York.

The **Independent Pneumatic Tool Company,** Aurora, Ill., has announced the election of the following officers: **Leonard S. Florsheim,** formerly chairman of the executive committee and a director, as chairman of the board of directors; **W. A. Nugent,** vice-president in charge of sales, as executive vice-president; and **Dr. Walter G. McGuire** as chairman of the executive committee. Those elections fill vacancies created by the death of **Neil C. Hurley,** which was reported in *Railway Age* of August 21.

F. E. Van Hoesen, president of the Transportation Seat Company, at Chicago, has joined **Tropic-Aire, Incorporated,** at that point, and will direct the railway sales activities in the firm's transportation seat division.

OBITUARY

Frederick C. Gifford, who retired in 1941 as first vice-president of the Acme Steel Company, at Chicago, died on September 4 at his summer home on Delavan Lake, Wis.

Thomas Bernard Lehon, vice-president of the Lehon Company at Chicago, manufacturers of roofing materials, died

Thomas Bernard Lehon

on September 8, following an illness of several months. Mr. Lehon, one of the organizers of the firm in 1905, was born in Oswego, N. Y., on October 17, 1875.

Harry H. Barber, chairman of the board of directors of the Barber-Greene Company, Aurora, Ill., manufacturers of bituminous road building equipment and material handling machinery, died on September 6. Mr. Barber, one of the pioneer designers of modern construction equipment, had been board chairman since September 25, 1945, at which time he retired as president of the firm. He received a degree in mechanical engineering at the University of Illinois in 1907, and was subsequently employed by the Stephens-Adamson Manufacturing Company at Aurora, working chiefly in the engineering and sales engineering departments. In 1916 Mr. Barber formed a partnership with William B. Greene, who also had been employed by Stephens-Adamson. The firm was incorporated as the Barber-Greene Company in 1917.

EQUIPMENT AND SUPPLIES

FREIGHT CARS

The **St. Louis-San Francisco** is inquiring for 200 70-ton drop-end gondola cars.

The **Western Pacific** is inquiring for 250 70-ton drop-end gondola cars, of which 200 are to be 52 ft. long and 50 are to be 65 ft. long.

The **Illinois Central** has ordered 1,500 50-ton hopper cars and 375 50-ton flat cars from its Centralia, Ill., shops. Construction of the hopper cars is scheduled to begin during the second quarter of 1949 and work on the flat cars will start in the fourth quarter of 1949. The inquiry for the flat cars was reported in *Railway Age* of June 19, page 58.

PASSENGER CARS

The **Union Pacific** has ordered model CF disk brakes to be installed on the 50 sleeping cars of the 10 cabin-6 double bedroom type being built for the road by the Budd Company (see *Railway Age* of March 6, page 67), it was announced this week by G. M. Barnes, vice-president in charge of engineering for Budd.

LOCOMOTIVES

The **Minneapolis, St. Paul & Sault Ste. Marie** has authorized the purchase of eight Diesel-electric locomotives at an estimated cost of $1,502,000. Included in the authorization are two 3,000-hp. freight locomotives to complete the Dieselization of the through-freight service between Minneapolis, Minn., and Sault Ste. Marie, Mich.; four 1,500-hp. road switchers to Dieselize way freights between Minneapolis and Enderlin, N. D., and the mixed train between Hankinson, N. D., and Bismarck; and two 1,000-hp. switchers for use at Minneapolis and Superior, Wis.

SIGNALING

The **Duluth, Missabe & Iron Range** has ordered equipment from the General Railway Signal Company for the installation of an automatic interlocking at Ambridge, Wis. Six Type SA searchlight signals will be automatically controlled. Type B plug-in relays will be used.

The **Atlantic Coast Line** has placed an order with the Union Switch & Signal Co. for materials for installation of centralized traffic control between Folkston, Ga., and Newell, 8½ mi. A Style C 2½-ft. control machine located at Folkston will control traffic in both directions on each track. Besides the machine the order includes Style H-2 searchlight ground and bridge signals, Style M-22B dual-control d.c. electric switch layouts, Style SL-26A electric locks on T-21 mechanisms for hand-operated switches, coded reversible d.c. track circuits, and all necessary relays, rectifiers, transformers and housings. Installation work will be handled by the railroad company's forces.

CONSTRUCTION

Union Pacific to Begin Work On $750,000 Freight Station

The Union Pacific is scheduled to begin construction soon of a $750,000 freight station at North Platte, Neb., to be located just north of the crest area in the road's new $3,500,000 retarder yard at that point (see *Railway Age* of February 14, page 354). The entire station will be built of reinforced concrete.

The office and warehouse portion of the structure will be 90 ft. wide by 100 ft. deep, with roofing of built-up tar and gravel.

Two covered freight platforms, each 20 ft. wide by 1,200 ft. long, will project from the rear of the warehouse building and will be served by tracks on either side. The platform roof will be of corrugated Transite. Platform facilities will include electric lights, power outlets for extension lights in cars being loaded and unloaded and a telephone system extending from the station office to any point on the platforms.

The freight station will be not only a distributing point for through freight but will also serve the North Platte area. All freight consigned to North Platte and all freight outbound from the city will pass through the new facility.

A contract for grading has been awarded Grosshans & Petersen of Marysville, Kan. The freighthouse and transfer platforms will be constructed by United Builders, Inc., North Platte.

Bessemer & Lake Erie.—This road has awarded a contract to the Ferguson & Edmondson Co., Pittsburgh, Pa., for an overhead highway bridge at Euclid, Pa., at an estimated cost of $48,500.

Baltimore & Ohio.—This road has awarded the following contracts at a total estimated cost of $580,000: To George Vang, Inc., Pittsburgh, Pa., for reconstructing bridge 453 at Brecksville, Ohio, bridge 443 at Everett and bridge 68 at Akron Junction; to the W. Brode Company, Newcomerstown, Ohio, for reconstructing bridge 36 at Niles Junction, Ohio, and bridge 54/10 at Farmers; to the American Bridge Company, Baltimore, Md., for reconstructing bridge 167/92 at Johnsonburg, Pa.; to the Empire Construction Company, Baltimore, for reconstructing bridge 121/82 at Riverdale, Ind.; and to the Navarro Corporation, Pittsburgh, for Diesel servicing and maintenance facilities at Glenwood, Pa.

Lake Superior & Ishpeming.—This road has been authorized to construct and operate an extension to its so-called North Lake Branch from a point near Ishpeming, Mich., to a point near Republic, approximately 14.3 miles. The purpose of the extension is to provide rail service to a new iron ore mining operation and to prospective developments which are expected to furnish traffic for the next 50 years. The mining properties are owned by the Cleveland-Cliffs Iron Co., which also controls the L. S. & I. through stock ownership. The new segment is estimated to cost $900,000.

Central of New Jersey.—This road has awarded a contract to Nicholson & Galloway, Inc., New York, for repairs to thaw sheds at Jersey City, N. J. The estimated cost of the project is $25,600.

Terminal Association of St. Louis.—This company plans to complete the following improvements within the next five years (estimated costs in parentheses): New parking lot at Union Station ($150,000); changes in the company's principal shops at Brooklyn, Ill., ($300,000), at CD yard, East St. Louis, Ill., ($100,000), and at the engine terminal facilities at 14th street, St. Louis, Mo., ($450,000); and a new boiler at the Union Station power house ($300,000).

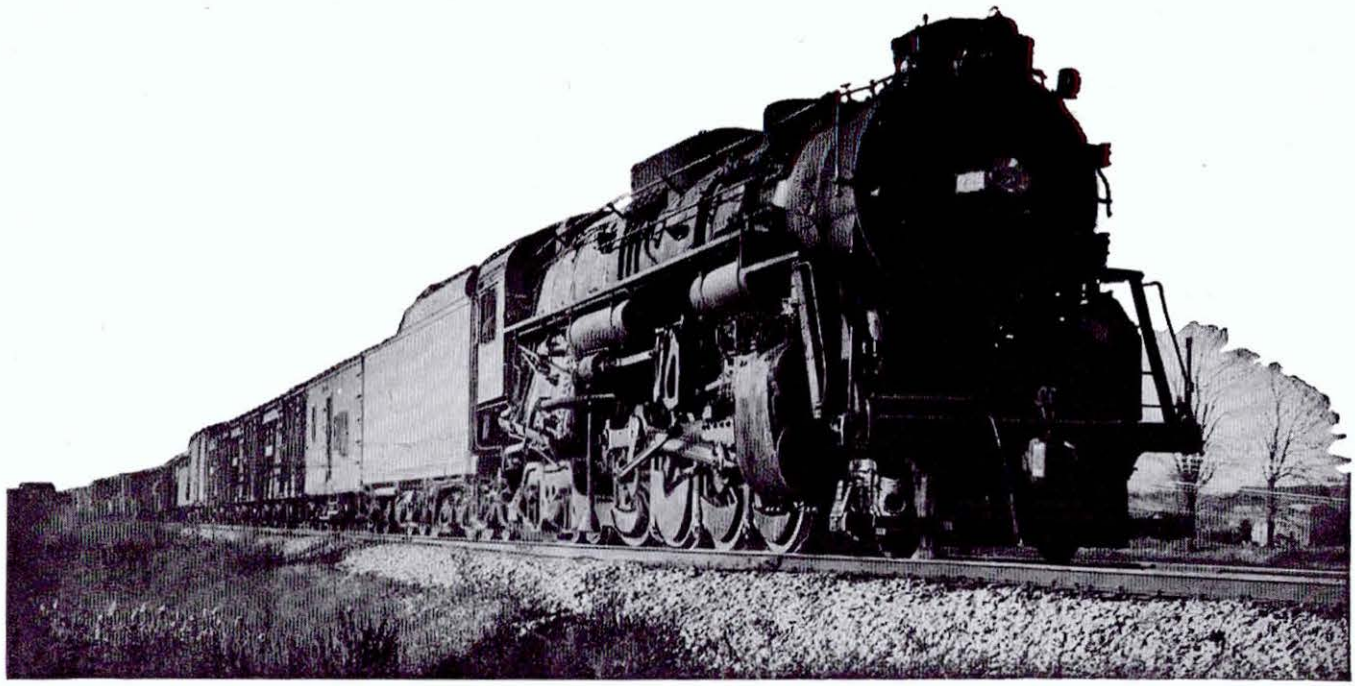
FINANCIAL

$160 Million of R. R. Securities Sold in 2nd Quarter of 1948

New railroad securities offered for cash sale in the United States during the second quarter of 1948 amounted to $160,000,000, according to the quarterly analysis recently made public by the Securities and Exchange Commission. Of this total, the flotation of railroad equipment issues accounted for $130,000,000. In the first quarter of the year railroad securities offered for sale totaled $139,000,000, and in the third and fourth quarters of 1947 the totals were, respectively, $57,000,000 and $93,000,000.

Boston & Maine.—*Stock Adjustment.*—The Interstate Commerce Commission has set November 2 as a hearing date on this road's application under the so-called Mahaffie Act for authority to modify the eight classes of its outstanding capital stock by converting such stock into one class of new common stock. The hearing will be held at Washington, D. C., before Examiner H. H. Kirby. The application was des-

News Department continued on next left-hand page



Steam trains are making 2,000,000 miles a day

While the spotlight of public attention naturally falls on newest developments, it is sometimes well to back off and take a look at the overall picture.

We're thinking of the steam locomotive. These locomotives are making better than two million train-miles today — and will do it again tomorrow and the next day. They — these steam locomotives — are producing more revenue ton-miles right now than ever before in peacetime history.

Many of these locomotives are old, too old, and have distorted the statistics on performance. Many, however, are modern. And on modern steam power — locomotives that pack 5000 to 9000 horsepower and can stay on the road for 16 and 18 hours, and then turn around in an hour or two — the statistics look pretty good.

We build such modern power — and are convinced that it has its place.

LIMA HAMILTON CORPORATION

DIVISIONS: *Lima, Ohio* — Lima Locomotive Works Division; Lima Shovel and Crane Division. *Hamilton, Ohio* — Hooven, Owens, Rentschler Co.; Niles Tool Works Co.

PRINCIPAL PRODUCTS: Locomotives; Cranes and shovels; Niles heavy machine tools; Hamilton diesel and steam engines; Hamilton heavy metal stamping presses; Hamilton-Kruse automatic can-making machinery; Special heavy machinery; Heavy iron castings; Weldments.

cribed in detail in *Railway Age* of August 28, page 68.

Gulf, Mobile & Ohio.—*Preferred Dividend.*—This road has declared a dividend of $1.25 a share on the $5 preferred stock, payable on September 30 to stockholders of record on September 17. The previous payment on this issue was $2.50 a share on January 14.

Missouri-Kansas-Texas of Texas.—*New Director.*—Arthur S. Hopkins, president of Mrs. Tucker's Foods, Inc., Sherman, Texas, has been elected a director of this road, a subsidiary of the Missouri-Kansas-Texas. Mr. Hopkins succeeds the late Adolphus Andrews.

New Securities

Application has been filed with the Interstate Commerce Commission by:

Southern.—To assume liability for $8,700,000 of series 00 equipment trust certificates, the proceeds of which would be applied toward the purchase of 64 1,500-hp. Diesel-electric road freight locomotives, consisting of 34 lead units and 30 booster units, and 11 1,000-hp. Diesel-electric switching locomotives. The cost of the freight locomotives will range from $149,123 each to $173,455 each, while the cost of the switching locomotives will vary from $106,006, to $109,008. Total cost of the equipment, which is to be acquired from the Electro-Motive Division of the General Motors Corporation, is estimated at $11,600,000. The certificates would be dated October 15, would be sold on the basis of competitive bidding and would mature in 20 semi-annual installments of $435,000, starting April 1, 1949.

Southern Pacific.—To assume liability for $11,050,000 of series Y equipment trust certificates, the proceeds of which would be applied toward the purchase of the following equipment:

	Description and Builder	Estimated Unit Cost
2	1,500-hp. type 0-6-6-0 Diesel-electric road switching locomotives (Baldwin Locomotive Works)	$157,570
3	1,000-hp. type 0-4-4-0 Diesel-electric switching locomotives (Electro-Motive Division, General Motors Corporation)	105,100
3	600-hp. type 0-4-4-0 Diesel-electric switching locomotives (General Electric Co.)	75,559
2,050	50-ton steel-sheathed wood-lined box cars (Pullman-Standard Manufacturing Co.)	4,989
650	50-ton all-steel drop-bottom gondola cars (Bethlehem Steel Co.)	5,216
3	lightweight baggage cars (Pullman-Standard)	79,797
3	lightweight baggage-postal cars (Pullman-Standard)	82,759
2	lightweight refreshment-tavern cars (Pullman-Standard)	131,959
6	lightweight combination diner-kitchen-coffee shop cars (Pullman-Standard)	348,981
80	30-ton all-steel wood-lined cabooses (to be built in applicant's own shops)	8,156

The certificates would be dated October 1, would be sold on the basis of competitive bidding and would mature in 10 annual installments of $1,105,000 starting October 1, 1949.

Division 4 of the I.C.C. has **authorized:**

Chicago, Rock Island & Pacific.—To assume liability for $3,420,000 of series B equipment trust certificates, proceeds of which will be applied toward the purchase of equipment estimated to cost $4,570,800, as described in *Railway Age* of August 14, page 82. The certificates will be dated September 15 and will mature in 20 semi-annual installments of $171,000, starting March 15, 1949. The report also approves a selling price of 99.253 with a 2¼ per cent interest rate, the bid of Salomon Brothers & Hutzler, on which basis the average annual cost will be approximately 2.41 per cent. The certificates were reoffered to the public at prices yielding from 1.15 per cent to 2.55 per cent, according to maturity.

Dividends Declared

Chicago, Rock Island & Pacific.—75c, quarterly, payable September 30 to holders of record September 23.

Gulf, Mobile & Ohio.—$5.00 preferred, $1.25, payable September 30 to holders of record September 17; $5.00 preferred, $1.25, payable December 28 to holders of record December 10; $5.00 preferred, $1.25, payable March 30, 1949, to holders of record March 10; $5.00 preferred, $1.25, payable June 30, 1949, to holders of record June 10.

Norwich & Worcester.—8% preferred, $2.00, quarterly, payable October 1 to holders of record September 15.

Providence & Worcester.—$2.50, payable October 1 to holders of record September 13.

Average Prices Stocks and Bonds

	Sept. 15	Last week	Last year
Average price of 20 representative railway stocks	48.89	50.78	46.85
Average price of 20 representative railway bonds	89.32	89.68	88.45

CAR SERVICE

The Office of Defense Transportation has issued General Permit ODT 18A, Revised-13C, effective September 13 through November 30, so as to provide that carload shipments of green sweet potatoes may be offered, accepted and transported at the applicable tariff carload minimum weight when originating in any point in Iowa, Maryland, North Carolina, South Carolina or Virginia. This relaxes the previous loading requirements of 28,000 lb. minimum weight on the commodity involved.

RAILWAY OFFICERS

EXECUTIVE

Glenn B. Henderson, general manager of the Chicago & Eastern Illinois, at Chicago, will be advanced on October 1 to vice-president—personnel, a newly-created position. **George H. Smith,** executive vice-president, will become vice-president—finance.

FINANCIAL LEGAL and ACCOUNTING

Fred W. Stoll, whose promotion to auditor of freight accounts of the Louisville & Nashville, at Louisville, Ky., was reported in the *Railway Age* of September 11, is a native of Golconda, Ill. He was first employed by the L. & N. in 1907 in the office of the auditor of

Fred W. Stoll

freight accounts, and in 1916 was appointed assistant chief clerk. Mr. Stoll was further advanced to chief clerk of the statistical bureau in 1918 and to general chief clerk in 1929. He was serving in the latter position at the time of his recent appointment.

OPERATING

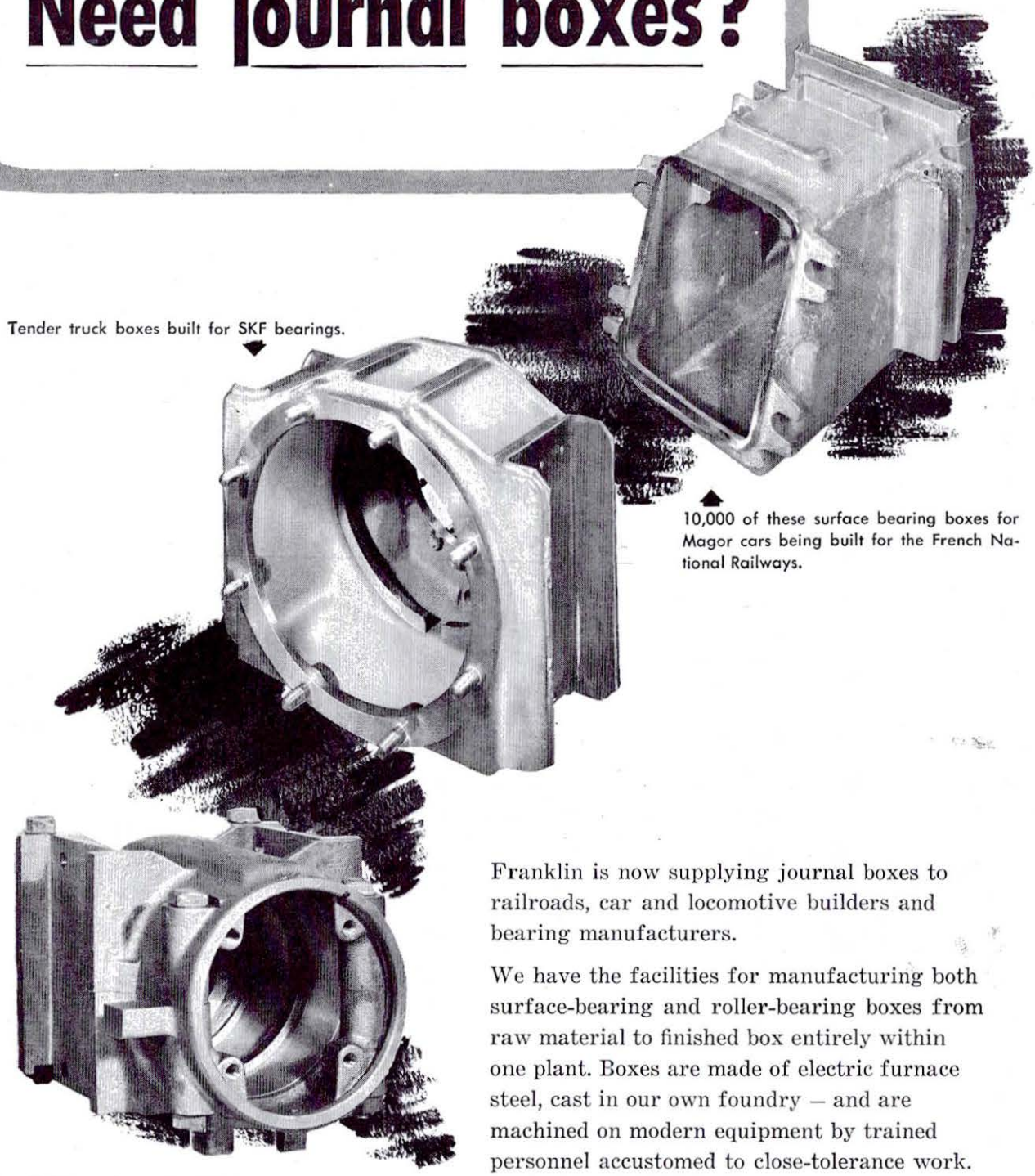
A. J. Farnham, whose promotion to superintendent of the Chicago, Milwaukee, St. Paul & Pacific at Ottumwa, Iowa, was reported in the *Railway Age* of August 21, was born on July 11, 1901, at LaCrosse, Wis. He first entered service with the Milwaukee in 1919 as an operator, being promoted in 1927 to train dispatcher. Mr. Farnham was advanced to assistant train-

A. J. Farnham

master at Milwaukee, Wis., in 1940, and later served in that post at Green Bay, Wis., and Minneapolis, Minn. He was appointed assistant superintendent at Perry, Iowa, in 1944 and was transferred to the Milwaukee terminal in 1946. On November 1, 1947, he was appointed assisistant superintendent of

News Department continued on next left-hand page

Need journal boxes?



Tender truck boxes built for SKF bearings.

10,000 of these surface bearing boxes for Magor cars being built for the French National Railways.

Split-type boxes for SKF bearings.

Franklin is now supplying journal boxes to railroads, car and locomotive builders and bearing manufacturers.

We have the facilities for manufacturing both surface-bearing and roller-bearing boxes from raw material to finished box entirely within one plant. Boxes are made of electric furnace steel, cast in our own foundry – and are machined on modern equipment by trained personnel accustomed to close-tolerance work.

We invite your inquiries.

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NEW YORK • CHICAGO • MONTREAL

STEAM DISTRIBUTION SYSTEM • BOOSTER • RADIAL BUFFER • COMPENSATOR AND SNUBBER • POWER REVERSE GEARS
AUTOMATIC FIRE DOORS • DRIVING BOX LUBRICATORS • STEAM GRATE SHAKERS • FLEXIBLE JOINTS • CAR CONNECTION

the Milwaukee division at Milwaukee, which position he held at the time of his recent appointment.

Downing B. Jenks, superintendent of the Great Northern, at Spokane, Wash., will become general manager of the Chicago & Eastern Illinois on October 1, succeeding **Glenn B. Henderson,** who is to be advanced to vice-president—personnel. **R. H. Hemmesch** has been appointed superintendent of the Great Northern at Klamath Falls, Ore., succeeding **F. V. Percival,** who has been transferred to Spokane, replacing Mr Jenks.

Albert R. Nice, Jr., assistant superintendent of the Shamokin division of the Reading at Tamaqua, Pa., has been promoted to superintendent of that division, succeeding **W. S. Sloatman,** who has been assigned to other duties. **G. G. Clauser,** road foreman of engines at Philadelphia, Pa., has been appointed assistant superintendent of the Shamokin division. **H. F. Smith,** division engineer at Tamaqua, has been appointed assistant superintendent of the Reading division at Reading, Pa.

TRAFFIC

Carl J. Stegeman, whose promotion to traffic manager of the Union Pacific at Detroit, Mich., was reported in the *Railway Age* of September 4, first entered U. P. service in 1915 as a station helper at Silver Creek, Neb. He spent 11 years in the operating department in Nebraska and in 1926 was

Carl J. Stegeman

transferred to Cleveland, Ohio, as traveling agent. He was advanced to traveling freight and passenger agent at that point in 1928 and to general agent there in 1939. Mr. Stegeman was serving in the latter position at the time of his recent appointment.

Albert J. Laneri, traveling freight and passenger agent of the Illinois Terminal, has been appointed general agent at New Orleans, La., succeeding **William A. Nelson, Jr.,** who has been transferred to Memphis, Tenn. **J. M. Fowler** has been appointed general agent at Cleveland, Ohio. The position formerly held by Mr. Laneri has been abolished.

Madison H. Fowler, whose promotion to assistant freight traffic manager of the Union Pacific at Omaha, Neb., was reported in the *Railway Age* of September 4, was born on April 12, 1904, at Parsons, Kan. Mr. Fowler entered railroad service with the U. P. in 1922 as a stenographer at Riverside, Cal. He later served as city ticket agent, passenger and freight traffic agent and travel-

Madison H. Fowler

ing freight and passenger agent until 1934, when he was advanced to general agent. He was appointed assistant general agent at Los Angeles, Cal., in 1938 and to general agent at that point in 1943. Mr. Fowler went to Detroit, Mich., in 1945 as traffic manager, which position he held at the time of his recent appointment.

MECHANICAL

M. C. Haver, assistant general mechanical engineer of the Union Pacific, has been promoted to general mechanical engineer, with headquarters at Omaha, Neb., succeeding **F. J. Jumper,** whose retirement was reported in the *Railway Age* of January 17 of this year. Mr. Haber is replaced by **E. O. Joest,** mechanical engineer.

F. T. James, whose appointment as general superintendent of motive power and equipment of the Delaware, Lackawanna & Western at Scranton, Pa., was reported in the *Railway Age* of August 21, was born on March 16, 1894, at Buffalo, N. Y., where he attended the public schools and studied the machine shop practice course of the Y.M.C.A. Following a business college course, he entered civil service. From 1906 to 1909 he served an apprenticeship and in September, 1909, became an enginehouse utility worker on the Lackawanna at East Buffalo, N. Y. Mr. James subsequently served as machinist, locomotive inspector and general foreman, becoming master mechanic of the Morris & Essex division at Hoboken, N. J., in May, 1939.

F. T. James

In June, 1941, he was appointed assistant to chief of motive power at Scranton and five months later he became chief of motive power, which position he held until his recent appointment as general superintendent of motive power and equipment.

PURCHASES and STORES

E. R. Brinton, who has been on leave of absence from his position as general storekeeper of the Chicago Great Western, with headquarters at Oelwein, Iowa, has returned to that post.

ENGINEERING and SIGNALING

J. R. Murray, roadmaster of the Denver & Rio Grande Western, at Green River, Utah, has been appointed division engineer at Grand Junction, Colo., succeeding **W. B. Jacobsen,** who has been transferred.

OBITUARY

Bertram G. Cross, late division superintendent of the Minneapolis, St. Paul & Sault Ste. Marie at Enderlin, N. D., whose death was reported in the *Railway Age* of August 28, was born on September 3, 1888, at Minneapolis, Minn. Mr. Cross began his railroad career with the Soo Line in 1905 as a passenger brakeman, subsequently serving as freight brakeman, conductor and special representative in the office of the president. He was advanced in 1927 to trainmaster and in 1931 to division superintendent at Bismarck, N. D. He was transferred in 1937 to Enderlin, where he was located at the time of his death.

E. S. McPherson, president of the Spokane International, died at his home in Spokane, Wash., on August 26 at the age of 67, following a short illness.

Table of Freight Operating Statistics appears on next left-hand page

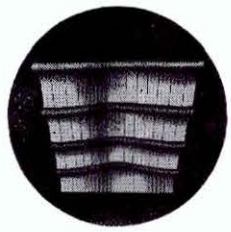
Each individual locomotive should earn a profit, and to make it possible to do so the locomotive must be kept in condition for maximum utilization.

TO KEEP A LOCOMOTIVE *"IN THE BLACK"*

To make available all the power the locomotive is capable of producing — and to get the utmost value from every ton of coal burned — the maintenance of a 100% brick arch in the firebox is essential.

The heavier the train and the higher the speed, the greater are the gains from keeping the arch complete. Whatever the type of locomotive, a Security Sectional Arch assures long service with low maintenance costs.

HARBISON-WALKER REFRACTORIES CO.
Refractories Specialists



AMERICAN ARCH CO. INC.
60 East 42nd Street, New York 17, N.Y.
Locomotive Combustion Specialists

Freight Operating Statistics of Large Steam Railways—Selected

	Region, road and year	Miles of road operated	Train-miles	Locomotive miles: Principal and helper	Locomotive miles: Light	Car-miles: Loaded (thousands)	Car-miles: Per cent loaded	Ton-miles (thousands): Gross excl.locos. & tenders	Ton-miles (thousands): Net rev. and non-rev.	Road locos. on line: Serviceable: Unstored	Road locos. on line: Serviceable: Stored	Road locos. on line: B.O.	Percent B.O.
New Eng. Region	Boston & Albany 1948	362	117,015	122,713	10,441	3,068	64.6	201,994	87,125	45	9	30	35.7
	1949	362	143,685	154,707	17,207	3,305	64.2	213,989	89,655	59	7	24	26.7
	Boston & Maine 1948	1,746	297,242	305,992	14,111	10,681	70.1	670,135	295,530	97	3	17	14.5
	1947	1,750	308,134	315,291	11,269	10,986	71.5	672,210	295,134	99	1	17	14.5
	N. Y., N. H. & Htfd 1948	1,820	344,159	636,868	54,092	12,993	68.6	796,240	351,603	192	12	41	17.0
	1947	1,820	361,149	513,440	42,455	13,701	71.2	810,323	357,537	173	2	42	18.5
Great Lakes Region	Delaware & Hudson 1948	794	277,147	335,719	35,359	11,930	68.3	862,906	467,830	130	29	24	13.1
	1947	794	287,956	345,176	32,001	12,397	70.5	886,095	488,397	122	39	30	15.7
	Del., Lack. & Western 1948	970	307,197	344,561	38,070	13,294	69.7	886,973	418,410	104	25	18	12.2
	1947	970	324,005	368,204	44,084	13,910	70.2	920,962	430,858	108	14	19	13.5
	Erie 1948	2,229	653,089	691,449	59,263	34,290	65.3	2,304,774	993,805	234	53	84	22.6
	1947	2,229	779,255	827,856	59,362	36,590	65.0	2,457,810	1,020,191	262	18	102	26.7
	Grand Trunk Western 1948	972	294,170	299,854	2,444	9,474	66.7	633,076	288,784	64	6	10	12.5
	1947	972	315,054	323,742	2,787	10,227	66.0	677,531	300,327	66	..	11	14.3
	Lehigh Valley 1948	1,239	307,626	342,662	45,146	12,456	68.2	859,227	426,771	83	4	27	23.7
	1947	1,239	317,174	352,882	57,092	13,826	69.3	950,048	470,872	117	11	40	23.8
	New York Central 1948	10,339	3,236,195	3,476,061	239,406	114,978	62.9	8,169,531	3,870,153	1,072	66	287	20.1
	1947	10,338	3,169,722	3,405,227	231,481	117,752	64.6	8,078,484	3,789,055	1,009	25	356	25.6
	New York, Chic. & St. L. 1948	1,656	607,454	615,140	8,340	24,892	68.3	1,614,317	716,856	136	13	19	11.3
	1947	1,656	661,707	668,581	8,807	26,140	65.7	1,708,439	732,842	138	2	22	13.6
	Pitts. & Lake Erie 1948	223	92,054	93,739	380	4,355	70.6	364,604	224,473	31	5	15	29.4
	1947	223	104,819	107,568	164	4,385	67.2	367,408	219,232	32	..	15	31.9
	Wabash 1948	2,381	649,364	661,548	15,311	23,037	69.9	1,477,477	638,405	156	13	34	16.7
	1947	2,381	614,131	628,712	14,090	22,842	72.5	1,432,207	625,657	166	5	34	16.6
Central Eastern Region	Baltimore & Ohio 1948	6,076	1,964,261	2,419,097	266,998	68,613	62.5	5,240,128	2,643,304	812	2	298	26.8
	1947	6,103	2,066,689	2,608,598	299,253	71,426	63.2	5,315,759	2,653,671	851	12	271	23.9
	Central of New Jersey* 1948	417	79,480	83,109	9,532	3,113	66.5	232,783	118,956	49	3	16	23.5
	1947	419	84,471	96,974	18,080	3,578	68.2	265,060	145,479	53	..	31	36.9
	Central of Pennsylvania 1948	213	79,161	90,145	15,946	3,014	69.3	225,525	122,772	39	3	13	23.6
	1947	213	84,843	100,372	21,759	3,095	69.5	228,778	126,445	43	..	18	29.5
	Chicago & Eastern Ill. 1948	909	171,294	172,192	4,031	5,348	66.8	372,338	183,916	53	..	16	23.2
	1947	910	174,977	175,469	3,743	5,490	70.5	364,865	181,930	57	1	15	20.5
	Elgin, Joliet & Eastern 1948	391	107,530	108,347	293	3,672	68.3	287,311	160,803	39	8	..	..
	1947	391	117,221	121,600	3,484	3,601	67.7	276,911	151,671	43	6	14	22.2
	Pennsylvania System 1948	10,023	3,782,413	4,260,462	549,787	150,933	64.1	11,004,517	5,467,614	1,817	18	258	12.3
	1947	10,031	3,950,213	4,485,166	631,260	157,562	66.7	11,104,412	5,547,103	1,961	41	254	11.3
	Reading 1948	1,337	445,635	475,199	48,555	16,505	65.5	1,275,789	705,595	204	22	42	15.7
	1947	1,356	475,134	529,597	64,258	16,897	65.9	1,302,155	721,955	236	24	34	11.6
	Western Maryland 1948	837	207,981	252,323	39,910	7,352	62.0	607,689	335,038	159	4	12	6.9
	1947	837	232,544	281,236	38,549	8,040	62.5	676,556	375,267	155	2	12	7.1
Pocahontas Region	Chesapeake & Ohio 1948	5,003	1,691,826	1,814,477	85,495	74,462	58.6	6,293,647	3,588,313	597	8	92	13.2
	1947	4,981	1,680,753	1,785,177	76,579	73,135	57.9	6,129,848	3,441,598	601	9	102	14.3
	Norfolk & Western 1948	2,107	885,085	950,297	70,425	40,277	58.1	3,608,476	2,008,998	281	18	29	8.8
	1947	2,108	798,308	848,931	60,522	36,982	58.2	3,236,681	1,780,690	259	30	28	8.8
Southern Region	Atlantic Coast Line 1948	5,552	987,825	1,016,122	14,059	25,456	65.1	1,705,242	775,433	361	2	80	18.1
	1947	5,556	1,061,523	1,075,130	17,064	26,031	64.5	1,725,002	768,864	380	24	49	10.8
	Central of Georgia* 1948	1,783	301,356	306,259	5,052	7,584	70.4	498,597	238,174	99	2	10	9.0
	1947	1,782	289,525	295,580	5,563	7,133	71.4	466,597	221,609	90	4	8	7.8
	Gulf, Mobile & Ohio 1948	2,847	352,961	257,212	365	16,728	71.2	1,106,263	534,032	110	20	18	12.2
	1947	2,846	392,465	402,766	407	16,039	70.3	1,044,836	489,432	137	14	14	8.5
	Illinois Central 1948	6,550	1,455,117	1,458,619	51,509	52,037	63.2	3,696,688	1,755,921	567	8	83	12.6
	1947	6,582	1,456,311	1,477,948	51,355	53,672	64.3	3,689,188	1,721,853	547	30	93	13.9
	Louisville & Nashville 1948	4,750	1,538,714	1,660,036	45,069	39,540	61.4	2,964,586	1,527,370	400	1	83	17.1
	1947	4,759	1,506,225	1,624,649	43,749	37,966	62.3	2,762,078	1,393,983	398	6	76	15.8
	Nash., Chatt. & St. Louis 1948	1,051	262,506	274,406	7,773	6,318	75.5	397,625	193,822	92	..	8	8.0
	1947	1,052	274,513	293,019	8,197	6,845	78.1	407,566	198,274	81	..	24	22.9
	Seaboard Air Line 1948	4,141	780,620	817,810	13,164	23,155	66.0	1,559,327	712,256	280	7	57	16.6
	1947	4,145	845,254	894,240	11,177	23,961	66.2	1,600,009	701,991	278	11	60	17.2
	Southern 1948	6,449	1,594,206	1,620,783	28,705	42,355	68.6	2,750,411	1,255,762	543	18	114	16.9
	1947	6,451	1,594,806	1,618,866	28,107	42,191	69.6	2,686,730	1,217,946	560	24	109	15.7
Northwestern Region	Chicago & North Western 1948	8,055	987,441	1,029,951	26,042	32,751	67.0	1,277,050	1,015,281	361	5	99	21.3
	1947	8,061	975,368	1,012,182	28,822	32,847	73.3	2,135,695	985,410	354	2	119	25.1
	Chicago Great Western 1948	1,445	211,941	212,177	10,694	8,864	69.6	583,608	264,984	47	6	24	31.2
	1947	1,445	231,553	236,735	11,136	7,717	71.7	494,884	225,296	69	..	16	18.8
	Chic., Milw., St. P. & Pac. 1948	10,663	1,352,781	1,419,524	53,387	43,966	64.7	3,021,122	1,373,329	454	67	75	12.6
	1947	10,725	1,356,464	1,426,712	58,643	45,837	69.8	2,991,629	1,387,944	464	35	102	17.0
	Chic., St. P., Minn. & Omaha 1948	1,606	203,559	216,142	13,885	5,560	70.5	373,976	178,477	74	1	40	34.8
	1947	1,606	192,720	206,466	11,813	5,137	74.4	330,226	150,768	84	..	31	27.0
	Duluth, Missabe & Iron Range 1948	571	172,173	172,888	1,143	9,327	51.5	874,816	526,164	52	..	1	1.9
	1947	547	162,057	162,437	748	8,909	50.9	819,094	498,248	46	..	2	4.2
	Great Northern 1948	8,237	1,001,697	1,000,365	51,043	41,794	64.7	3,105,061	1,567,312	351	41	77	16.4
	1947	8,237	939,047	942,124	36,195	37,914	67.2	2,778,524	1,414,163	315	50	67	15.5
	Minneap., St. P. & S. St. M. 1948	4,180	396,402	403,498	6,185	12,200	67.7	814,891	390,675	124	..	11	8.1
	1947	4,181	431,757	443,518	9,360	12,497	69.1	835,565	407,851	122	..	11	8.3
	Northern Pacific 1948	6,613	779,823	816,404	47,122	30,217	68.1	2,079,057	979,480	308	46	56	13.7
	1947	6,623	785,883	827,196	49,186	30,111	69.9	2,030,317	951,374	335	53	45	10.4
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.) 1948	13,081	3,218,098	3,477,189	186,342	121,425	67.0	8,218,836	3,295,900	802	33	139	14.3
	1947	13,107	3,105,020	3,326,906	192,074	114,586	63.8	7,877,092	2,922,675	808	51	99	10.3
	Chic., Burl. & Quincy 1948	8,670	1,208,718	1,230,001	42,186	48,124	63.5	3,386,504	1,547,297	371	56	96	18.4
	1947	8,671	1,125,509	1,173,735	48,976	44,848	70.1	3,022,191	1,458,594	388	10	84	17.4
	Chic., Rock I. & Pac. 1948	7,613	1,282,197	1,320,458	14,418	40,031	61.3	2,823,389	1,220,648	314	5	66	17.1
	1947	7,619	1,353,147	1,388,633	17,756	42,531	64.8	2,876,060	1,248,311	312	..	91	22.6
	Denver & R. G. Wn. 1948	2,443	353,018	395,318	50,115	12,696	74.9	856,043	431,571	139	45	36	16.4
	1947	2,467	354,830	396,314	48,023	11,504	76.2	765,800	386,647	141	66	38	15.5
	Southern Pacific 1948	8,095	2,241,903	2,508,016	443,259	92,352	63.6	6,407,980	2,516,451	750	5	167	18.1
	1947	8,159	2,296,259	2,582,282	523,777	92,167	67.3	6,115,199	2,422,426	802	2	199	19.8
	Union Pacific 1948	9,751	1,970,579	2,058,018	156,706	85,703	67.8	5,752,542	2,582,771	484	143	126	16.7
	1947	9,775	2,316,355	2,450,975	227,510	88,513	68.5	6,011,479	2,604,299	650	85	96	11.6
	Western Pacific 1948	1,192	222,612	244,979	26,465	9,829	79.6	594,440	283,653	69	40	16	12.8
	1947	1,192	239,629	268,196	23,584	10,243	74.9	654,054	312,927	75	23	33	25.2
Southwestern Region	International-Gt. Northern* 1948	1,110	227,608	228,496	1,021	6,410	67.3	450,626	209,403	66	2	10	12.8
	1947	1,110	226,532	227,557	410	6,292	69.8	405,312	180,453	57	..	16	21.9
	Kansas City Southern 1948	885	176,442	177,104	1,362	8,614	65.8	596,763	280,444	43	10	6	10.2
	1947	885	202,416	207,554	3,422	8,740	66.9	603,600	291,761	53	4	12	17.4
	Mo.-Kans.-Texas Lines 1948	3,241	561,346	582,258	8,321	16,982	61.4	1,180,858	522,058	124	2	30	19.2
	1947	3,241	623,879	637,286	8,528	16,752	65.0	1,131,782	515,526	129	..	37	22.3
	Missouri Pacific* 1948	6,986	1,401,824	1,444,177	32,786	47,480	64.9	3,268,031	1,466,394	427	..	64	13.0
	1947	6,985	1,474,277	1,533,623	35,546	47,853	65.5	3,200,830	1,389,772	413	2	73	15.0
	Texas & Pacific 1948	1,852	534,002	534,002	11,724	16,182	58.3	1,183,588	463,142	114	2	10	7.9
	1947	1,871	510,476	517,798	7,100	16,346	61.2	1,147,839	449,770	103	25	11	7.9
	St. Louis-San Francisco 1948	4,615	891,767	947,409	10,821	23,355	65.4	1,636,135	749,561	316	4	26	7.5
	1947	4,615	1,015,263	1,059,358	12,089	24,952	65.0	1,746,880	804,791	278	18	31	9.5
	St. Louis Southw. Lines 1948	1,568	383,658	385,863	5,183	14,940	71.8	909,899	406,738	84	9	13	12.3
	1947	1,568	384,946	389,831	5,241	14,642	72.9	876,363	391,746	86	10	13	11.9
	Texas & New Orleans 1948	4,314	899,313	901,641	20,808	24,344	66.9	1,664,029	736,331	216	..	35	13.9
	1947	4,318	910,813	911,171	18,195	24,599	70.5	1,596,958	700,812	215	..	36	14.3

*Report of trustee or trustees.

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

Items for the Month of June 1948 Compared with June 1947

Region	Road	Year	Freight cars on line: Home	Foreign	Total	Per Cent B.O.	G.t.m.per train-hr. excl.locos. and tenders	G.t.m.per train-mi. excl.locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Coal lb. per 1000 g.t.m. inc.-loco.	Mi. per loco. per day
New Eng. Region	Boston & Albany	1948	243	4,910	5,153	0.7	28,490	1,736	749	28.4	559	30.5	8,023	148	60.7
		1949	244	5,223	5,467	0.2	24,320	1,498	628	27.1	543	31.2	8,256	172	71.4
	Boston & Maine	1948	1,850	9,635	11,485	2.6	34,693	2,259	996	27.7	847	43.7	5,642	100	99.8
		1947	1,281	10,510	11,791	2.1	33,658	2,187	960	26.9	829	43.2	5,622	113	92.0
	N. Y., N. H. & Htfd	1948	1,430	18,037	19,467	2.2	34,070	2,317	1,023	27.1	611	32.9	6,440	78	98.5
		1947	1,438	18,504	19,942	1.9	32,055	2,250	993	26.1	601	32.4	6,548	89	80.5
Great Lakes Region	Delaware & Hudson	1948	2,989	6,423	9,412	4.7	56,102	3,129	1,696	39.2	1,566	58.5	19,640	106	69.5
		1947	1,980	6,962	8,942	3.7	55,326	3,092	1,704	39.4	1,784	64.2	20,504	97	68.9
	Del., Lack. & Western	1948	5,365	11,273	16,638	5.7	42,750	2,941	1,388	31.5	832	37.9	14,378	105	96.4
		1947	5,002	14,076	19,078	3.7	43,228	2,886	1,350	31.0	774	35.6	14,806	106	108.6
	Erie	1948	6,531	25,530	32,061	3.8	55,837	3,555	1,533	29.0	1,021	53.9	14,862	100	75.8
		1947	5,080	25,839	30,919	3.7	52,768	3,183	1,321	27.9	1,116	61.6	15,256	92	84.4
	Grand Trunk Western	1948	5,641	9,080	14,721	6.4	44,345	2,171	990	30.5	664	32 7	9,903	76	134.4
		1947	3,902	9,573	13,475	6.2	45,163	2,180	966	29.4	769	39.7	10,299	84	156.4
	Lehigh Valley	1948	7,329	9 402	16,731	11.1	51,181	2,866	1,424	34.3	779	33.3	11,482	105	106.4
		1947	5,107	13,819	18,926	5.3	54,328	3,084	1,529	34.1	830	35.2	12,668	100	85.2
	New York Central	1948	51,615	98,959	150,574	4.1	40,092	2,563	1,214	33.7	846	40.0	12,448	104	97.5
		1947	42,728	97,894	140,622	3.6	41,195	2,585	1,212	32.2	883	42.5	12,217	103	97.3
	New York, Chic. & St. L.	1948	2,858	12,804	15,662	1.7	52,045	2,672	1,186	28.8	1,542	78.4	14,429	84	131.8
		1947	2,017	13,209	15,226	1.2	51,700	2,590	1,111	28.0	1,544	83.9	14,751	83	147.3
	Pitts. & Lake Erie	1948	3,515	11,204	14,719	8.0	57,636	3,968	2,443	51.5	508	14.0	33,554	90	69.8
		1947	2,507	11,149	13,656	5.4	53,025	3,524	2,103	50.0	530	15.8	32,770	93	82.7
	Wabash	1948	6,586	14,880	21,466	3.2	45,977	2,293	991	27.7	1,025	53.0	8,937	104	116.7
		1947	4,984	15,073	20,057	4.1	46,617	2,357	1,030	27.4	1,063	53.5	8,759	103	109.2
Central Eastern Region	Baltimore & Ohio	1948	44,278	46,021	90,299	7.1	33,721	2,725	1,375	38.5	960	39.9	14,501	138	82.4
		1947	36,928	50,793	87,721	5.2	33,191	2,625	1,310	37.2	1,064	42.7	14,494	141	87.9
	Central of New Jersey*	1948	804	9,501	10,305	5.1	40,274	3,037	1,552	28.2	388	15.3	9,509	94	74.6
		1947	591	10,509	11,100	2.7	39,567	3,220	1,767	40.7	452	16.3	11,574	127	69.8
	Central of Pennsylvania	1948	1,031	3,554	4,585	10.1	40,812	2,997	1,632	40 7	859	30.5	19,213	121	80.7
		1947	1,074	3,815	4,889	7.0	37,067	2,810	1,553	40 9	885	31.2	19,788	141	76.5
	Chicago & Eastern Ill.	1948	1,984	4,147	6,131	6.2	37,740	2,213	1,093	34.4	1,022	44.5	6,744	108	89.4
		1947	1,867	4,202	6,069	4.9	37,603	2,123	1,059	33.1	1,014	43.4	6,664	104	85.0
	Elgin, Joliet & Eastern	1948	6,456	11,148	17,604	1.6	19,370	2,805	1,570	43.8	302	10.1	13,709	109	110.7
		1947	6,153	10,216	16,369	2.1	19,181	2,504	1,372	42.1	307	10.8	12,930	117	96.3
	Pennsylvania System	1948	113,942	122,557	236,499	9.2	39,785	3,009	1,495	36.2	766	33.0	18,184	116	83.1
		1947	110,426	131,282	241,708	9.9	39,673	2,913	1,455	35.2	763	32.5	18,433	123	81.9
	Reading	1948	9,747	19,911	29,658	6.4	36,096	2,873	1,589	42.8	803	28.7	17,591	100	77.0
		1947	8,023	24,958	32,981	2.6	36,708	2,746	1,522	42.7	724	25.7	17,747	101	77.0
	Western Maryland	1948	4,210	3,862	8,072	1.4	31,632	2,970	1,638	45.6	1,458	51.6	13,343	146	61.1
		1947	2,525	6,112	8,637	1 0	31,830	2,969	1,647	46.7	1,354	46.4	14,945	140	68.1
Poca-hontas Region	Chesapeake & Ohio	1948	45,812	29,718	75,530	1.9	56,819	3,776	2,153	48.2	1,604	56.8	23,908	76	98.3
		1947	49,914	30,674	80,588	1.6	57,963	3,709	2,083	47.1	1,423	52.2	23,032	74	93.9
	Norfolk & Western	1948	28,080	7,268	35,348	3.5	65,857	4,160	2,316	49.9	2,011	69.4	31,783	88	113.2
		1947	29,716	7,070	36,786	2.8	66,587	4,126	2,270	48.2	1,622	57.9	28,158	89	103.1
Southern Region	Atlantic Coast Line	1948	8,986	17,206	26,192	5 0	27,809	1,735	789	30.5	924	46.6	4,656	120	83.5
		1947	7,744	19,283	27,027	4.1	26,790	1,633	728	29.5	924	48.5	4,613	121	85.9
	Central of Georgia*	1948	2,389	6,881	9,270	4.1	30,349	1,658	792	31.4	856	38.7	4,453	126	99.4
		1947	1,794	6,591	8,385	2.7	29,849	1,616	768	31.1	899	40.5	4,145	131	105.9
	Gulf, Mobile & Ohio	1948	2,816	11,417	14,233	1.7	58,151	3,151	1,521	31.9	1,216	53.5	6,253	69	86.3
		1947	2,443	13,332	15,775	1.5	48,408	2,668	1,250	30.5	1,013	47.2	5,732	57	89.6
	Illinois Central	1948	17,192	31,926	49,118	1.9	45,052	2,569	1,220	33.7	1,158	54.3	8,936	115	80.8
		1947	14,662	38,667	53,329	1.4	44,112	2,599	1,213	32.1	1,109	53.7	8,720	116	80.5
	Louisville & Nashville	1948	29,595	15,802	45,397	4.1	29,463	1,929	994	38.6	1,144	48.2	10,718	125	123.8
		1947	24,603	15,935	40,539	4.4	28,726	1,834	925	36.7	1,131	49.4	9,764	122	121.5
	Nash., Chatt. & St. Louis	1948	1,051	4,738	5,789	6.5	29,928	1,527	745	30.7	1,113	48.1	6,147	135	103.5
		1947	855	5,925	6,780	5.5	28,376	1,491	725	29.0	1,053	46.5	6,282	128	100.5
	Seaboard Air Line	1948	6,758	15,143	21,901	1.5	35,127	2,053	938	30.8	1,040	51.2	5,733	114	90.3
		1947	5,557	16,552	22,109	1.8	34,120	1,942	852	29.3	1,038	53.5	5,845	113	95.1
	Southern	1948	13,159	31,558	44,717	3.6	29,913	1,746	797	26.6	925	45.5	6,491	121	86.5
		1947	13,034	32,752	45,786	5.1	29,449	1,703	772	28.9	877	43.6	6,293	126	83.6
Northwestern Region	Chicago & North Western	1948	19,481	33,320	52,801	3.2	34,959	2,415	1,077	31.0	636	30.6	4,201	114	81.8
		1947	17,807	34,849	52,656	3.6	32,603	2,319	1,070	30.0	632	28.7	4,075	123	79.4
	Chicago Great Western	1948	1,485	4,639	6,124	4.3	45,498	2,754	1,250	29.9	1,423	68.4	6,113	108	102.1
		1947	1,080	5,615	6,695	2.4	32,926	2,151	979	29.2	1,224	58.5	5,197	125	104.7
	Chic., Milw., St. P. & Pac	1948	23,792	36,870	60,662	1.9	36,169	2,252	1,024	31.2	772	38.2	4,293	118	88.7
		1947	19,047	37,234	56,281	2.0	34,857	2,225	1,032	30.3	812	38.4	4,314	116	89.0
	Chic., St. P., Minn. & Omaha	1948	1,080	7,757	8,837	5.5	24,665	1,904	909	32.1	689	30.4	3,704	106	74.3
		1947	959	7,117	8,076	6.7	22,975	1,756	802	29.3	647	29.6	3,129	114	71.3
	Duluth, Missabe & Iron Range	1948	15,045	469	15,514	2.4	85,331	5,299	3,187	56.4	1,146	39.4	30,716	58	134.1
		1947	14,656	477	15,133	1.5	91,529	5,226	3,179	55.9	1,104	38.7	30,362	58	133.0
	Great Northern	1948	22,588	19,002	41,590	2.9	48,342	3,124	1,577	37.5	1,245	51.3	6,343	85	81.2
		1947	19,773	23,566	43,339	2.8	47,843	2,980	1,517	37.3	1,036	41.3	5,723	86	79.5
	Minneap., St. P. & S. St. M.	1948	6,154	8,673	14,827	7.9	35,783	2,068	992	32.0	838	38.6	3,115	86	108.6
		1947	5,768	8,894	14,662	7.7	33,587	1,960	956	32.6	943	41.9	3,252	89	122.4
	Northern Pacific	1948	18,244	18,307	36,551	5.4	45,015	2,687	1,266	32.4	905	41.0	4,937	130	76.1
		1947	16,685	19,655	36,340	5.2	44,430	2,607	1,222	31.6	875	39.6	4,788	130	73.6
Central Western Region	Atch., Top. & S. Fe (incl. C. G. & S. F. & P. & S. F.)	1948	44,472	39,462	83,934	4.8	50,009	2,573	1,032	27.1	1,303	71.7	8,399	98	132.7
		1947	37,455	44,984	82,439	5.0	48,969	2,555	948	25.5	1,179	72.5	7,433	99	128.3
	Chic., Burl. & Quincy	1948	16,169	25,424	41,593	3.4	50,805	2,812	1,285	32.2	1,261	61.8	5,949	92	85.2
		1947	13,451	32,662	46,113	2.6	41,699	2,702	1,304	32.5	1,067	46.8	5,607	101	87.2
	Chic., Rock I. & Pac	1948	11,382	27,766	39,148	3.8	38,261	2,213	957	30.5	1,050	56.2	5,345	96	120.3
		1947	9,649	28,970	38,619	2.5	36,129	2,138	928	29.4	1,078	56.7	5,461	100	121.3
	Denver & R. G. Wn	1948	7,380	6,233	13,613	4.0	40,666	2,427	1,232	34.0	1,053	41.3	5,889	164	70.2
		1947	7,071	5,139	12,210	5.2	37,209	2,174	1,098	33.6	1,058	41.3	5,224	162	64.4
	Southern Pacific	1948	26,786	45,346	72,132	3.5	45,506	2,888	1,134	27.2	1,167	67.4	10,362	90	113.0
		1947	21,413	40,877	62,290	3.3	41,644	2,696	1,068	26.3	1,251	70.7	9,897	100	110.6
	Union Pacific	1948	29,365	32,906	62,271	3.9	61,887	2,966	1,332	30.1	1,427	69.8	8,829	109	100.1
		1947	25,780	32,646	58,426	3.5	52,811	2,643	1,145	29.4	1,549	76.8	8,881	124	111.3
	Western Pacific	1948	1,997	3,275	5,272	8.0	53,742	2,679	1,278	28.9	1,753	76.3	7,932	52	73.3
		1947	2,266	2,635	4,901	6.4	54,880	2,747	1,314	30.6	1,784	77.9	8,751	60	76.2
Southwestern Region	International-Gt. Northern*	1948	423	6,842	7,265	1.5	36,338	2,005	932	32.7	999	45.5	6,288	96	105.0
		1947	365	6,757	7,122	1.4	33,179	1,807	804	28.7	850	42.5	5,419	103	111.1
	Kansas City Southern	1948	1,394	6,148	7,542	4.1	66,226	3,396	1,596	32.6	1,284	60.0	10,563	102	111.0
		1947	864	6,202	7,066	4.0	57,822	3,011	1,456	33.4	1,357	60.8	10,989	103	108.7
	Mo.-Kans.-Texas Lines	1948	3,352	10,390	13,742	1.1	37,279	2,132	942	30.7	1,355	71.7	5,369	81	134.2
		1947	1,252	9,463	10,715	.8	32,728	1,841	839	30.8	1,587	79.4	5,302	81	139.3
	Missouri Pacific*	1948	18,204	23,774	41,978	2.1	43,809	2,345	1,052	30.9	1,180	58.8	6,997	94	107.5
		1947	16,447	29,849	46,296	1.5	39,273	2,183	948	29.0	1,033	54.3	6,632	106	113.2
	Texas & Pacific	1948	1,562	11,048	12,610	2.4	43,693	2,236	875	28.4	1,381	82.7	8,336	88	153.0
		1947	1,286	9,273	10,559	2.1	42,119	2,281	894	27.5	1,508	89.5	8,013	90	130.2
	St. Louis-San Francisco	1948	7,749	14,230	21,979	2.2	34,955	1,851	848	32.1	1,106	52.7	5,414	120	99.9
		1947	4,246	18,371	22,617	2.1	33,454	1,732	798	32.3	1,228	58.5	5,813	120	115.1
	St. Louis Southw. Lines	1948	1,649	5,822	7,471	2.0	45,461	2,373	1,061	27.2	1,808	92.5	8,647	75	131.2
		1947	1,184	6,500	7,684	2.7	44,712	2,279	1,019	26.8	1,772	90.8	8,328	74	127.3
	Texas & New Orleans	1948	3,761	18,520	22,281	2.8	36,084	1,869	827	30.2	1,138	56.2	5,689	81	130.3
		1947	2,857	16,423	19,280	2.1	35,636	1,772	777	28.5	1,220	60.7	5,410	85	128.2

Revenue and Expense table appears on next left-hand page

REVENUES AND EXPENSES OF RAILWAYS

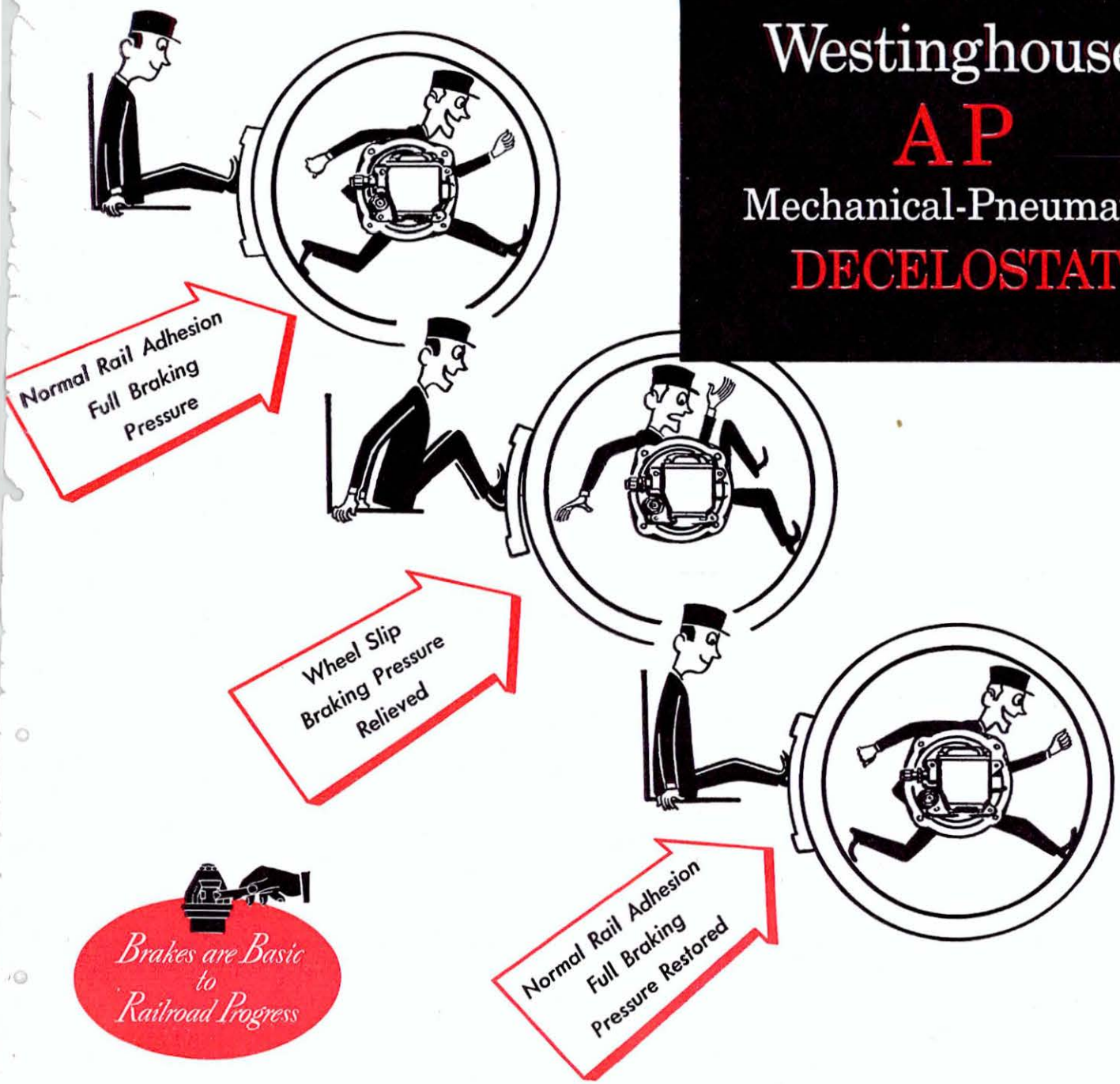
MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1948

Name of road		Av. mileage operated during period	Operating revenues			Operating Expenses					Operating ratio	Net from railway operation	Railway tax-accruals	Net railway operating income	
						Maintenance of									
			Freight	Passenger	Total (inc. misc.)	Way and structures	Equipment	Traffic	Transportation	Total				1948	1947
Akron, Canton & Youngstown	July	171	471,591	108	494,040	68,622	43,454	24,446	131,074	290,600	58.1	203,440	75,767	106,183	32,908
	7 mos.	171	3,240,517	521	3,379,162	477,311	328,195	182,034	944,529	2,099,602	62.1	1,279,560	477,560	651,154	467,048
Atchison, Topeka & Santa Fe	July	13,081	42,287,450	5,096,661	51,211,541	7,009,674	7,810,684	891,346	15,813,521	33,399,863	65.2	17,811,678	7,976,973	9,180,777	7,223,903
	7 mos.	13,081	242,994,762	30,500,915	298,621,824	45,366,651	51,452,872	6,636,916	106,397,722	221,824,894	74.3	76,796,930	38,457,908	37,403,922	29,243,231
Atlanta & St. Andrews Bay	July	82	179,139	2,961	189,857	26,840	17,501	6,466	48,866	109,689	57.8	80,168	23,714	39,133	15,654
	7 mos.	82	1,333,981	10,546	1,394,419	162,158	105,622	43,468	354,276	743,288	53.3	651,131	233,878	274,815	174,927
Atlanta & West Point	July	93	255,725	54,897	352,449	42,768	50,085	13,379	184,553	310,831	88.2	41,618	21,381	6,282	9,159
	7 mos.	93	1,972,026	369,506	2,657,447	274,745	356,787	95,716	1,292,551	2,172,447	81.7	485,000	233,273	111,651	—38,904
Western of Alabama	July	133	269,455	52,821	353,701	47,403	61,615	13,552	157,449	298,264	84.3	55,437	31,670	24,853	10,994
	7 mos.	133	1,970,373	361,897	2,580,087	276,417	403,028	95,244	1,107,291	2,019,785	78.3	560,302	305,077	250,387	129,224
Atlantic Coast Line	July	5,572	7,780,598	1,610,674	10,130,541	2,147,643	2,190,055	277,496	4,433,267	9,542,746	94.2	587,795	400,000	54,436	—334,365
	7 mos.	5,572	65,203,717	12,623,241	83,963,415	14,666,706	13,454,789	2,051,313	34,816,593	68,564,284	81.7	15,399,131	7,450,000	5,688,683	2,674,481
Charleston & Western Carolina	July	343	415,906	3,198	429,822	70,222	67,538	15,038	162,961	327,244	76.1	102,578	35,000	52,551	19,353
	7 mos.	343	2,885,404	26,457	2,991,051	531,710	529,920	100,654	1,202,846	2,435,878	81.4	555,173	225,000	250,865	238,434
Baltimore & Ohio	July	6,192	31,214,520	2,505,728	35,591,318	4,562,412	6,989,819	751,952	13,863,568	27,647,952	77.7	7,943,366	3,126,278	4,585,427	2,371,877
	7 mos.	6,192	201,938,045	13,748,431	228,492,190	26,969,409	46,192,333	4,895,753	97,310,806	184,942,569	80.9	43,549,621	17,354,254	24,867,276	17,985,106
Staten Island Rapid Transit	July	29	170,973	101,244	288,660	69,469	42,428	1,679	167,055	308,176	106.8	—19,516	37,857	—73,773	—34,361
	7 mos.	29	1,269,597	763,471	2,141,551	408,930	297,163	11,475	1,121,398	2,044,688	95.5	96,863	292,092	—340,660	—317,676
Bangor & Aroostook	July	602	709,013	59,244	807,739	218,820	179,879	10,345	225,781	680,848	84.3	126,891	119,753	52,137	5,419
	7 mos.	602	8,960,648	316,608	9,540,638	1,647,331	1,373,306	58,807	2,588,778	5,983,220	62.7	3,557,418	1,605,572	1,942,079	1,164,583
Bessemer & Lake Erie	July	214	2,908,849	1,518	2,929,806	147,975	534,512	22,057	535,685	1,307,576	44.6	1,622,230	772,335	1,053,556	872,635
	7 mos.	214	13,872,919	8,734	13,999,861	1,110,784	3,457,302	132,229	3,176,522	8,361,073	59.7	5,638,788	3,234,744	4,352,081	4,091,345
Boston & Maine	July	1,757	5,424,536	1,489,951	7,639,142	1,218,071	1,144,729	120,530	3,138,504	5,945,098	77.8	1,694,044	748,203	692,537	401,981
	7 mos.	1,757	40,838,234	8,448,327	54,251,704	9,221,057	8,125,666	705,787	22,725,043	42,910,394	79.1	11,341,310	4,627,513	3,963,521	3,387,910
Burlington -Rock Island	July	228	312,429	59,362	395,199	40,255	31,235	5,201	157,706	254,507	64.4	140,692	8,532	64,155	99,875
	7 mos.	228	2,124,743	368,248	2,632,117	352,170	258,214	33,082	1,030,453	1,811,620	68.8	820,497	69,573	398,027	50,943
Cambria & Indiana	July	35	130,089	.....	130,144	14,584	49,964	739	23,726	97,994	75.3	32,150	63,750	83,038	15,769
	7 mos.	35	795,206	.....	795,539	84,756	673,155	5,285	155,262	976,329	122.7	—180,790	385,457	234,114	239,177
Canadian Pacific Lines in Maine	July	234	280,016	41,632	348,276	86,494	49,192	9,083	142,935	303,070	87.0	45,206	2,009	—13,426	—60,772
	7 mos.	234	3,308,043	243,342	3,719,237	614,941	493,581	50,365	1,471,703	2,718,964	73.1	1,000,273	163,300	299,404	225,873
Canadian Pacific Lines in Vermont	July	90	172,203	16,195	207,514	40,157	23,789	6,593	137,307	216,851	104.5	—9,337	Cr. 6,532	—43,530	—111,386
	7 mos.	90	1,146,991	100,052	1,378,593	301,307	229,456	36,038	1,084,795	1,700,310	123.3	—321,717	94,814	—730,753	—737,041
Central of Georgia	July	1,815	2,563,995	280,471	3,057,277	509,636	515,583	102,882	1,437,504	2,727,570	89.2	329,707	180,088	115,144	—36,461
	7 mos.	1,815	18,394,120	1,778,556	22,047,232	3,396,037	3,499,640	721,666	10,281,757	19,051,786	86.4	2,995,446	1,721,942	1,089,790	—386,910
Central of New Jersey	July	417	2,765,765	636,850	3,623,477	509,556	563,695	54,050	1,752,275	3,064,228	84.6	559,249	390,345	—136,406	—361,840
	7 mos.	417	19,110,146	3,705,729	24,524,010	3,761,714	4,094,826	376,291	12,392,204	21,937,390	89.5	2,586,620	2,802,772	—2,461,246	—2,361,228
Central of Pennsylvania	July	213	1,672,898	21,975	1,723,373	167,640	257,517	23,613	512,376	1,002,590	58.2	720,783	70,136	909,075	688,590
	7 mos.	213	11,535,076	128,721	11,929,319	1,058,203	2,170,735	164,392	3,780,878	7,466,872	62.6	4,462,447	477,649	5,833,832	4,563,552
Central Vermont	July	422	664,000	102,000	825,000	183,579	130,561	14,019	360,533	724,558	87.8	100,442	45,599	798	75,309
	7 mos.	422	5,267,000	427,000	6,075,000	983,830	970,464	94,104	2,589,738	4,897,749	80.6	1,177,251	313,749	481,273	266,820
Chesapeake & Ohio	July	5,075	25,951,925	1,254,954	28,653,516	4,230,678	5,197,716	609,303	9,951,352	21,344,425	74.5	7,309,091	3,558,734	4,293,082	1,147,595
	7 mos.	5,071	172,333,719	6,413,837	187,081,572	27,459,059	35,527,058	5,081,383	68,343,802	145,277,732	77.7	41,803,840	21,691,331	23,636,253	24,937,326
Chicago & Eastern Illinois	July	909	2,130,023	366,105	2,711,088	374,244	518,889	117,746	1,146,256	2,292,962	84.6	418,126	142,600	111,373	25,953
	7 mos.	909	14,666,945	2,072,530	18,490,895	2,417,171	3,406,101	682,344	7,905,376	15,279,646	82.6	3,211,249	1,261,700	1,156,866	315,826
Chicago & Illinois Midland	July	131	813,187	1,068	846,425	97,431	114,280	23,106	198,184	464,419	54.9	382,006	153,132	221,525	99,837
	7 mos.	131	4,986,554	6,263	5,120,668	617,880	859,517	171,265	1,317,363	3,207,389	62.6	1,913,279	826,559	1,092,656	773,252
Chicago & North Western	July	8,058	12,710,888	2,823,704	17,220,589	2,725,952	2,785,464	307,701	7,150,228	13,792,259	80.1	3,428,330	1,606,173	1,436,998	486,481
	7 mos.	8,058	82,425,530	14,675,850	108,858,464	17,153,098	20,680,471	2,130,428	49,629,179	95,067,541	87.3	13,790,923	7,432,306	4,363,119	3,894,888
Chicago, Burlington & Quincy	July	8,867	17,473,211	2,181,067	21,395,304	3,456,992	3,133,984	395,756	7,099,357	14,791,031	69.1	6,604,273	3,210,979	3,111,158	1,763,026
	7 mos.	8,867	110,176,791	11,331,454	133,690,920	20,099,478	19,888,245	2,771,950	47,215,742	94,703,179	70.8	38,987,741	18,877,163	17,375,355	16,848,856
Chicago Great Western	July	1,500	2,620,859	57,710	2,877,047	484,722	313,067	98,230	1,116,811	2,109,006	73.3	768,041	285,240	280,118	183,320
	7 mos.	1,500	17,810,183	381,159	19,647,690	2,670,505	2,317,611	659,833	8,195,128	14,500,261	73.8	5,147,429	1,875,412	1,943,847	917,468
Chicago, Indianapolis & Louisville	July	541	1,322,332	113,188	1,515,878	277,109	204,374	78,864	606,275	1,262,459	83.3	253,419	4,424	148,335	—132,686
	7 mos.	541	9,472,880	652,526	10,816,996	1,636,347	1,432,774	524,431	4,191,951	8,409,536	77.7	2,407,460	526,768	1,143,942	—393,438
Chicago, Milwaukee, St. Paul & Pacific	July	10,671	16,961,067	2,299,028	21,409,320	3,719,264	3,785,269	418,530	8,888,554	17,775,046	83.0	3,634,274	1,659,000	1,371,082	514,967
	7 mos.	10,761	113,829,662	12,099,267	139,753,638	22,330,570	25,426,799	2,772,297	62,758,244	119,732,875	85.7	20,020,763	9,415,000	5,632,215	8,318,254
Chicago, Rock Island & Pacific	July	7,644	16,734,399	2,198,522	20,267,393	2,408,121	2,351,137	442,247	6,717,855	12,689,315	62.6	7,578,078	2,987,633	3,629,601	2,693,223
	7 mos.	7,648	91,627,086	12,927,191	113,014,287	13,325,598	17,065,578	3,072,762	44,607,455	83,090,110	73.5	29,924,177	12,599,185	12,018,090	11,845,300
Chicago, St. Paul, Minn. & Omaha	July	1,617	2,351,880	290,497	2,886,447	447,702	401,536	56,860	1,302,596	2,337,968	81.0	548,479	188,788	209,776	—34,843
	7 mos.	1,617	15,487,240	1,505,004	18,571,170	2,817,600	2,987,305	393,877	9,324,781	16,342,976	88.0	2,228,194	1,258,519	—70,515	354,485
Clinchfield	July	317	1,583,029	8,390	1,607,430	139,247	293,171	33,481	468,651	963,786	60.0	643,644	154,243	589,692	264,985
	7 mos.	317	11,245,917	40,814	11,375,664	961,539	1,936,089	224,369	3,454,938	6,787,922	59.7	4,587,742	1,124,359	4,096,642	4,098,409
Colorado & Southern	July	745	855,373	96,005	1,060,099	292,574	209,720	24,699	469,963	1,048,888	98.9	11,211	55,097	—41,282	53,092
	7 mos.	745	6,341,274	576,849	7,595,991	1,190,090	1,348,568	165,669	3,294,648	6,342,133	83.5	1,253,858	759,059	314,464	58,053
Ft. Worth & Denver City	July	902	1,505,729	174,360	1,785,558	204,700	195,545	41,062	546,887	1,063,542	59.6	722,016	262,910	377,191	599,725
	7 mos.	902	7,658,382	942,194	9,289,946	1,386,115	1,235,566	279,348	3,357,139	6,760,947	72.8	2,528,999	908,455	1,241,429	1,144,784

Table continued on next left-hand page.

Doing a good turn for Braking Efficiency

Westinghouse AP Mechanical-Pneumatic DECELOSTAT



Brakes are Basic to Railroad Progress

Here's a device that will put a big *Plus* in braking efficiency for your passenger equipment.

With simplified mechanical-pneumatic design, the Westinghouse AP Decelostat measures deceleration *right at each wheel*. It acts at the first hint of wheel slip, *relieves* the brake pressure before wheels can slide.

Restoration of brake pressure starts at once automatically, builds up to train value. Thus, braking pressure is momentarily relieved the instant wheel slip is detected—and the slip is arrested *before* it can develop into a slide.

Bulletin DL2461-1 will give you full details.

Westinghouse Air Brake Co.

WILMERDING, PA.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1948

Name of road		Av. mileage operated during period	Operating revenues: Freight	Operating revenues: Passenger	Operating revenues: Total (inc. misc.)	Operating Expenses: Maintenance of Way and structures	Operating Expenses: Maintenance of Equipment	Operating Expenses: Traffic	Operating Expenses: Transportation	Operating Expenses: Total	Operating ratio	Net from railway operation	Railway tax-accruals	Net railway operating income: 1948	Net railway operating income: 1947
Colorado & Wyoming	July	41	110,869	.....	200,854	13,624	22,341	5,540	77,367	120,810	60.1	80,044	44,756	34,855	25,414
	7 mos.	41	932,910	.....	1,528,232	77,414	157,024	8,235	573,260	859,586	56.2	668,646	259,345	406,263	208,172
Columbus & Greenville	July	168	152,110	—45	159,832	41,219	28,205	5,572	49,450	141,867	88.8	17,965	15,205	6,342	—19,285
	7 mos.	168	1,027,417	4,276	1,102,238	253,507	182,199	34,967	338,820	926,029	84.0	176,209	101,180	108,309	—148,738
Delaware & Hudson	July	794	4,370,462	220,254	4,747,272	734,696	1,024,414	74,525	1,836,539	3,839,244	80.9	908,028	483,591	444,972	421,920
	7 mos.	794	31,929,936	1,148,808	34,015,740	4,174,085	7,465,322	525,048	13,211,867	26,593,595	78.2	7,422,145	3,728,872	3,843,168	3,495,375
Delaware, Lackawanna & Western	July	973	6,018,934	1,062,395	7,691,113	1,052,828	1,193,495	143,042	3,177,995	5,796,096	75.4	1,895,017	888,749	948,637	579,734
	7 mos.	973	42,041,737	6,200,128	52,464,866	6,305,775	8,154,843	989,809	23,544,638	40,631,724	77.4	11,833,142	5,682,608	5,612,934	4,618,076
Denver & Rio Grande Western	July	2,443	4,913,853	337,923	5,521,691	787,622	963,967	147,293	1,966,477	4,134,603	74.9	1,387,088	571,967	877,606	558,419
	7 mos.	2,443	33,770,361	1,696,694	37,037,369	4,415,457	5,873,534	958,341	13,335,697	26,331,122	71.1	10,706,247	4,036,522	7,044,734	3,675,339
Detroit & Mackinac	July	230	180,139	1,454	193,353	32,500	21,346	2,015	35,841	99,264	51.3	94,089	34,731	55,508	14,855
	7 mos.	230	1,155,212	7,157	1,241,737	227,500	140,776	10,182	245,991	679,052	54.7	562,685	212,431	340,032	216,466
Detroit & Toledo Shore Line	July	50	482,931	.....	489,332	57,761	38,192	11,170	143,798	261,127	53.4	228,205	60,948	77,266	40,434
	7 mos.	50	3,831,982	.....	3,854,010	317,484	270,249	84,005	1,157,216	1,901,230	49.3	1,952,780	550,262	644,717	560,650
Detroit, Toledo & Ironton	July	464	1,178,112	1,105	1,233,650	159,533	184,740	20,596	312,372	709,989	57.6	523,661	194,971	302,880	194,181
	7 mos.	464	8,478,337	5,526	8,881,739	992,538	1,767,619	147,097	2,262,307	5,415,955	61.0	3,465,784	1,334,795	1,831,991	1,840,748
Duluth, Missabe & Iron Range	July	571	5,572,387	4,251	6,498,563	585,609	473,414	7,104	1,466,251	2,593,446	39.9	3,905,117	1,782,060	2,149,750	2,376,618
	7 mos.	570	20,505,317	16,514	23,985,817	3,500,968	3,191,578	51,003	6,745,877	13,914,195	58.0	10,071,622	4,992,515	5,048,995	4,569,452
Duluth, Winnipeg & Pacific	July	175	340,000	2,100	347,200	88,246	46,524	3,457	139,797	284,049	81.8	63,151	27,481	4,221	18,402
	7 mos.	175	2,589,000	10,000	2,629,000	495,482	328,458	23,869	1,068,938	1,956,581	74.4	672,419	209,685	139,111	106,966
Elgin, Joliet & Eastern	July	238	3,037,193	2	3,669,910	317,129	580,745	26,929	1,277,911	2,313,195	63.0	1,356,715	538,401	603,897	388,575
	7 mos.	369	21,941,348	21	26,340,301	1,682,748	3,708,179	184,599	9,848,152	16,108,955	61.2	10,231,346	3,898,318	4,257,354	3,230,111
Erie	July	2,229	12,413,077	882,355	14,491,033	2,018,342	2,254,693	316,457	5,719,611	10,989,063	75.8	3,501,970	1,515,501	1,494,085	497,429
	7 mos.	2,229	88,610,182	4,718,479	99,826,875	11,425,066	16,169,972	2,049,493	41,394,170	75,489,722	75.6	24,337,153	10,998,230	10,118,023	6,080,787
Florida East Coast	July	575	1,117,716	457,046	1,731,733	335,499	433,932	61,343	765,531	1,747,415	100.9	—15,682	110,523	—163,349	—389,905
	7 mos.	575	11,974,801	4,819,371	18,450,170	2,638,208	2,952,021	447,484	7,319,487	14,638,779	79.3	3,811,391	991,177	1,984,139	1,207,753
Georgia	July	326	653,119	41,762	738,176	103,338	108,022	27,483	354,272	615,651	83.4	122,525	24,823	110,776	59,960
	7 mos.	326	4,485,908	222,479	5,030,663	651,681	721,630	191,316	2,423,095	4,176,180	83.0	854,483	277,975	693,036	376,034
Georgia & Florida	July	408	284,064	2,459	292,054	62,204	36,960	15,398	115,833	238,546	81.7	53,508	15,095	19,150	—2,108
	7 mos.	408	1,549,884	12,774	1,603,247	413,637	226,375	87,358	672,568	1,457,402	90.9	145,845	113,751	—73,087	—83,755
Grand Trunk Western	July	972	3,604,000	244,000	4,106,000	766,125	665,782	61,390	1,811,687	3,458,359	84.2	647,641	223,814	313,751	18,365
	7 mos.	972	25,475,000	1,232,000	28,622,000	4,550,245	5,102,296	401,854	13,322,840	24,475,976	85.5	4,146,024	1,550,233	1,614,351	2,279,176
Canadian Nat'l Lines in New Eng.	July	172	162,000	24,000	200,000	69,212	36,786	2,720	114,833	229,078	114.5	—29,078	21,648	—80,205	—126,306
	7 mos.	172	1,223,000	63,300	1,377,000	465,396	273,580	18,828	891,538	1,709,468	124.1	—332,468	151,527	—717,666	—691,034
Great Northern	July	8,333	17,180,623	1,505,629	20,300,261	3,407,664	2,787,957	307,352	6,428,916	13,589,340	66.9	6,710,921	3,348,758	3,228,685	2,235,441
	7 mos.	8,333	93,367,136	7,132,562	109,599,025	21,488,788	19,165,555	2,211,095	43,631,109	90,645,098	82.7	18,953,927	6,940,689	10,649,912	9,339,046
Green Bay & Western	July	224	296,694	—38	302,403	108,333	35,248	16,557	91,227	265,303	87.7	37,100	10,741	9,116	—15,394
	7 mos.	224	2,052,715	220	2,100,014	498,152	222,241	126,305	620,919	1,569,258	74.4	530,756	252,699	164,604	146,587
Gulf, Mobile & Ohio	July	2,905	5,885,639	635,162	6,974,118	1,263,302	1,093,165	218,015	2,131,113	5,017,376	71.9	1,956,742	775,152	864,774	339,943
	7 mos.	2,906	39,285,037	3,671,319	46,081,249	7,937,805	7,681,970	1,553,447	15,001,202	34,422,595	74.7	11,658,654	4,509,531	4,922,929	4,026,722
Illinois Central	July	6,550	17,879,825	2,455,252	22,990,564	4,173,129	3,385,058	452,101	7,851,683	16,782,862	73.0	6,207,702	3,032,784	2,972,403	1,927,833
	7 mos.	6,572	121,582,184	14,624,403	152,273,238	24,389,656	25,727,161	2,925,137	55,856,847	115,254,165	75.7	37,019,073	18,474,738	16,536,936	14,957,659
Illinois Terminal	July	474	860,114	130,142	1,103,643	159,007	143,933	29,559	381,100	756,866	68.6	346,777	150,071	167,921	142,674
	7 mos.	474	5,845,332	850,167	7,401,488	1,040,468	944,620	203,670	2,707,600	5,160,685	69.7	2,240,803	964,633	1,075,823	950,104
Kansas City Southern	July	890	3,040,741	114,219	3,405,503	277,699	405,607	85,620	939,905	1,829,294	53.7	1,576,209	569,000	874,101	583,383
	7 mos.	890	20,813,982	669,162	23,153,132	1,845,451	2,721,314	579,038	6,507,202	12,484,728	53.9	10,668,404	4,122,000	5,634,404	3,916,425
Kansas, Oklahoma & Gulf	July	328	410,650	755	415,377	61,463	41,680	15,821	140,852	277,854	66.9	137,523	64,018	38,726	67,817
	7 mos.	328	3,198,049	6,402	3,233,466	390,990	272,416	113,554	897,119	1,796,681	55.6	1,436,785	605,390	545,926	642,555
Lake Superior & Ishpeming	July	156	430,813	74	547,867	57,829	38,811	1,700	103,848	211,414	38.4	336,453	148,112	198,569	195,557
	7 mos.	156	1,690,185	456	2,113,387	343,676	331,639	11,109	511,507	1,267,609	60.0	845,778	449,996	444,316	402,517
Lehigh & Hudson River	July	96	261,328	.....	262,594	47,582	34,670	7,463	87,532	185,404	70.6	771,190	24,973	32,474	2,502
	7 mos.	96	1,973,803	.....	1,981,075	292,936	260,900	55,703	720,440	1,388,480	70.1	592,595	230,081	191,222	155,501
Lehigh & New England	July	193	663,510	.....	674,185	90,033	103,904	10,811	205,770	441,323	65.5	232,862	120,051	152,692	105,469
	7 mos.	193	4,975,802	.....	5,038,545	617,209	723,854	78,346	1,676,377	3,314,118	65.8	1,724,427	795,395	1,004,299	700,498
Lehigh Valley	July	1,252	5,761,425	462,123	6,521,306	1,048,658	1,028,336	140,303	2,827,057	5,288,642	81.1	1,232,664	440,421	683,086	26,302
	7 mos.	1,252	40,718,968	2,448,960	45,525,865	6,303,653	7,210,776	971,322	20,986,222	37,243,852	81.8	8,282,013	2,831,207	4,005,017	2,936,364
Louisiana & Arkansas	July	756	1,673,460	54,321	1,786,465	201,881	176,220	46,225	550,104	1,020,302	57.1	766,163	287,583	350,528	181,328
	7 mos.	756	10,714,548	390,687	11,541,305	1,209,315	1,044,327	310,249	3,706,911	6,599,872	57.2	4,941,433	2,021,670	2,039,814	1,342,720
Louisville & Nashville	July	4,759	14,513,703	1,599,991	17,054,625	2,385,424	3,565,293	294,979	7,338,609	14,153,669	83.0	2,900,956	1,852,099	1,884,815	593,510
	7 mos.	4,759	103,443,574	9,111,312	119,497,523	16,942,372	24,963,873	2,067,051	51,300,745	99,509,614	83.3	19,987,909	14,137,546	10,560,501	9,670,138

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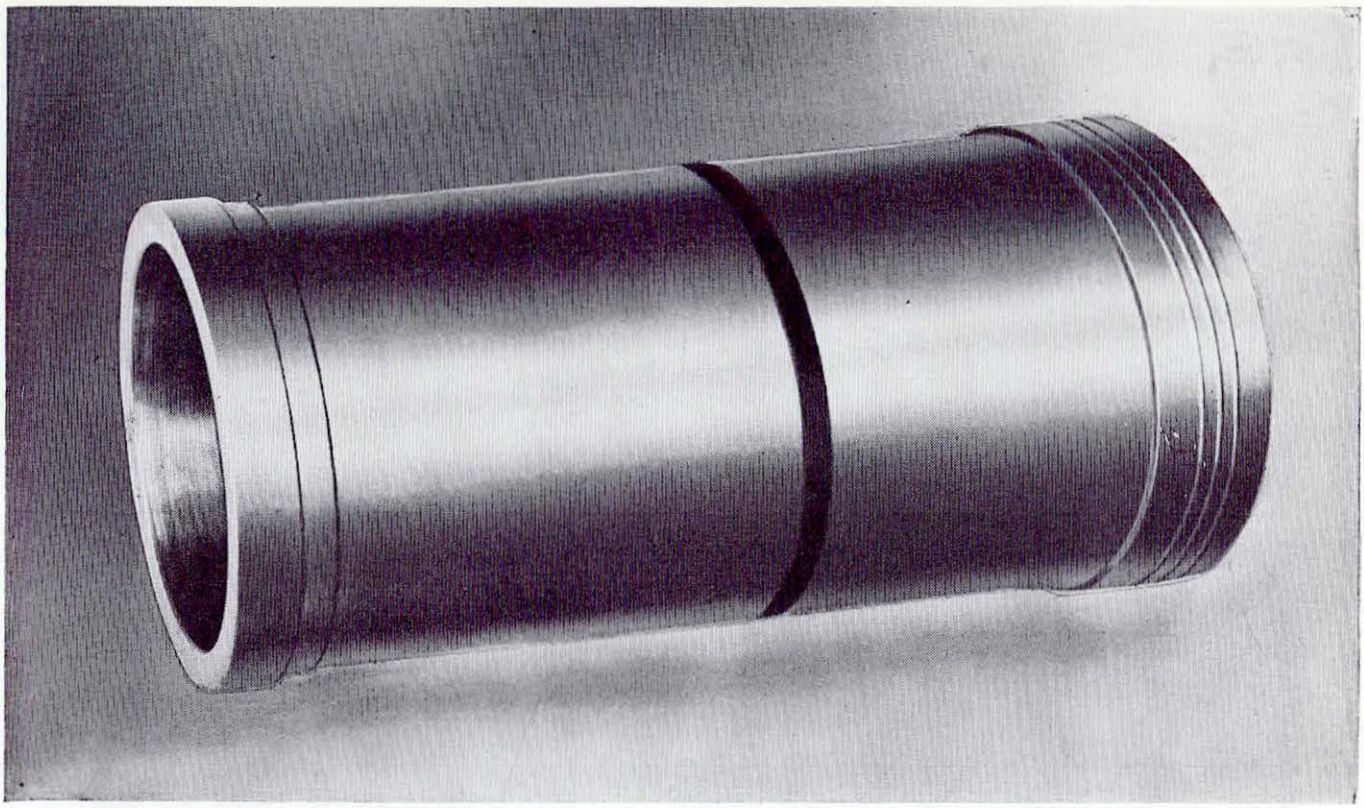

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Valve Bull Rings	Cylinder Liners and Pistons	Cylinder Snap Rings
	for Diesel Service	Valve Rings, All Shapes

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1948

Name of road		Av. mileage operated during period	Operating revenues			Operating Expenses					Operating ratio	Net from railway operation	Railway Tax accruals	Net railway operating incmoe	
						Maintenance of									
			Freight	Passenger	Total (inc. misc.)	Way and Street	Equip-ment	Traffic	Trans-portation	Total				1948	1947
Maine Central	July	988	1,743,089	257,180	2,134,046	393,462	361,216	19,103	801,696	1,643,007	77.0	491,039	258,563	235,567	148,727
	7 mos.	988	13,547,765	1,213,832	15,731,075	2,866,137	2,818,320	122,554	5,958,211	12,229,902	77.7	3,501,173	1,552,941	1,576,883	1,255,190
Midland Valley	July	334	184,340	23	188,195	51,478	18,778	3,161	67,505	147,242	78.2	40,953	19,053	15,424	21,691
	7 mos.	334	1,170,133	103	1,199,026	271,972	133,390	20,930	391,704	867,884	72.4	331,142	155,574	122,748	155,114
Minneapolis & St. Louis	July	1,401	1,587,228	11,544	1,650,290	336,358	262,239	103,207	521,826	1,303,526	79.0	346,764	155,720	171,199	142,219
	7 mos.	1,405	10,580,273	59,215	11,008,119	2,022,452	1,868,925	706,244	3,840,284	9,035,509	82.1	1,972,610	1,128,902	812,198	1,048,989
Minn., St. Paul & S. S. Marie	July	3,225	2,855,800	168,798	3,224,392	624,817	4[illegible]8,485	59,085	1,220,690	2,483,563	77.0	740,829	220,360	501,043	—154,458
	7 mos.	3,225	16,277,289	700,353	18,171,019	4,059,603	3,581,335	413,205	8,351,570	17,128,881	94.3	1,042,138	1,376,604	—373,097	375,108
Duluth, South Shore & Atlantic	July	530	515,979	11,989	561,919	154,137	77,595	16,536	197,549	455,982	81.1	105,937	25,507	55,465	87,876
	7 mos.	530	3,405,425	69,182	3,656,899	707,757	635,532	112,734	1,454,253	2,982,156	81.5	674,743	166,277	394,511	295,372
Spokane International	July	152	190,503	1,951	204,798	36,744	19,664	3,920	67,351	136,664	66.7	68,134	2,145	52,620	12,487
	7 mos.	152	1,049,097	10,666	1,140,374	258,761	142,106	26,657	416,791	908,150	79.7	232,224	72,359	74,110	92,277
Mississippi Central	July	148	209,028	—246	212,886	42,168	22,124	11,840	49,057	133,463	62.7	79,423	27,613	35,421	11,245
	7 mos.	148	1,253,167	3,390	1,285,207	272,820	124,759	82,232	311,357	850,951	66.2	434,256	142,706	175,037	92,360
Missouri & Arkansas	July	....	.....	.....	.....	Not in operation		.....	.....	.....	.....	.....	.....	.....	.....
	7 mos.	....	.....	.....	.....	Not in operation		.....	.....	.....	.....	.....	.....	.....	.....
Missouri-Illinois	July	172	371,803	438	374,462	65,566	43,329	6,182	93,830	217,367	58.0	157,095	65,914	80,025	41,774
	7 mos.	172	2,680,987	2,351	2,702,265	429,206	284,295	45,346	695,065	1,510,145	55.9	1,192,120	496,619	615,530	464,983
Missouri-Kansas-Texas Lines	July	3,253	6,654,400	451,868	7,605,596	979,549	985,961	212,139	2,758,498	5,204,114	68.4	2,401,482	873,099	1,028,589	662,976
	7 mos.	3,253	38,937,601	2,566,847	45,171,840	6,083,684	6,132,013	1,501,934	18,249,956	33,885,639	75.0	11,286,201	4,298,011	4,621,332	3,015,668
Missouri Pacific	July	7,012	18,111,411	1,392,975	20,921,159	2,991,642	2,796,389	398,970	7,491,388	14,302,064	68.4	6,619,095	2,380,794	3,469,815	2,125,631
	7 mos.	7,012	106,304,553	8,046,633	124,614,585	18,255,195	19,693,829	2,726,647	50,583,554	95,597,198	76.7	29,017,387	9,126,671	14,292,370	12,543,654
Gulf Coast Lines	July	1,719	3,362,190	99,760	3,612,608	681,718	406,745	76,527	1,201,512	2,488,712	68.9	1,123,896	349,296	532,951	481,920
	7 mos.	1,725	27,287,050	629,063	28,995,798	5,587,670	3,005,185	536,422	9,090,578	19,044,073	65.7	9,951,725	2,676,729	5,130,975	4,098,956
International-Gt. Northern	July	1,110	2,631,242	213,249	3,071,906	474,178	418,139	49,360	1,226,227	2,290,048	74.6	781,858	110,394	502,996	236,312
	7 mos.	1,110	16,181,464	1,353,985	19,265,504	3,301,460	2,904,446	349,338	8,942,525	16,351,968	84.9	2,913,536	794,300	977,428	485,905
Monongahela	July	170	708,106	1,500	717,282	86,440	69,609	975	217,744	380,434	53.0	336,848	92,343	111,906	70,642
	7 mos.	170	4,641,337	8,044	4,686,050	525,866	438,357	11,325	1,450,955	2,462,696	52.6	2,223,354	645,396	775,766	1,339,064
Montour	July	51	232,802	.....	233,876	29,221	83,527	746	73,351	196,740	84.1	37,136	36,964	55,475	45,609
	7 mos.	51	1,629,291	.....	1,635,681	148,851	472,471	5,172	531,777	1,227,866	75.1	407,815	375,156	456,500	445,303
Nashville, Chattanooga & St. Louis	July	1,051	2,370,304	218,528	2,804,309	450,698	495,905	111,289	1,185,083	2,355,539	84.0	448,770	272,162	185,362	148,942
	7 mos.	1,051	17,391,561	1,398,051	20,610,272	3,168,284	3,763,382	726,723	8,342,847	16,825,251	81.6	3,785,021	2,164,152	1,560,295	1,209,926
New York Central	July	10,745	46,496,307	14,022,997	66,757,498	10,371,432	12,186,251	1,046,999	28,425,403	55,062,849	82.5	11,694,649	4,563,325	5,482,637	3,113,938
	7 mos.	10,745	316,350,215	74,710,476	436,092,572	59,304,499	89,232,303	7,060,593	198,155,489	374,455,078	85.9	61,637,494	31,080,545	17,538,440	17,794,203
Pittsburgh & Lake Erie	July	223	3,493,564	129,778	3,770,856	507,634	970,992	64,288	1,269,182	2,974,238	78.9	796,618	611,148	734,182	560,953
	7 mos.	223	23,586,571	687,852	25,264,761	3,088,456	6,442,947	438,460	8,944,165	20,061,382	79.4	5,203,379	4,284,975	5,625,711	3,974,975
New York, Chicago & St. Louis	July	1,687	8,538,831	151,015	8,901,354	1,290,817	1,217,892	221,052	3,037,850	6,061,100	68.1	2,840,254	1,094,937	1,346,231	432,100
	7 mos.	1,687	60,652,092	883,126	62,928,836	7,980,752	9,554,864	1,469,488	22,256,450	43,346,635	68.9	19,582,201	7,420,434	9,190,331	5,463,823
New York, New Haven & Hartford	July	1,801	7,583,476	5,278,877	14,117,712	2,063,029	2,023,845	250,219	5,811,434	11,084,708	78.5	3,033,004	1,223,000	1,120,192	474,757
	7 mos.	1,833	56,524,839	32,989,121	99,170,249	14,710,479	13,587,756	1,736,137	42,662,752	79,119,733	79.8	20,050,516	7,375,000	5,558,773	3,035,329
New York Connecting	July	21	229,670	.....	243,317	89,456	16,039	.....	57,435	165,265	67.9	78,052	60,284	61,006	16,318
	7 mos.	21	1,592,306	.....	1,749,969	470,989	142,080	.....	510,855	1,141,925	65.3	608,044	441,587	376,558	259,704
New York, Ontario & Western	July	544	558,791	49,710	655,924	127,127	110,766	31,255	320,556	621,458	94.7	34,466	42,453	—90,531	—149,750
	7 mos.	544	4,163,477	82,614	4,591,897	822,046	791,966	211,108	2,485,386	4,528,404	98.6	63,493	292,883	—844,892	—586,936
New York, Susquehanna & Western	July	120	296,403	40,465	351,982	45,363	50,703	5,341	164,702	289,249	82.2	62,733	24,792	14,296	—7,022
	7 mos.	120	2,539,123	305,578	2,960,542	332,559	318,345	39,332	1,268,946	2,140,103	72.3	820,439	244,255	192,062	169,398
Norfolk & Western	July	2,129	14,381,104	656,396	15,703,181	1,999,364	2,926,838	257,852	4,839,802	10,537,888	67.1	5,165,293	2,894,178	3,394,674	1,607,354
	7 mos.	2,129	96,929,143	3,431,568	104,328,185	13,114,009	19,469,728	1,818,558	33,100,156	71,121,877	68.2	33,206,308	19,151,375	21,344,254	19,023,867
Norfolk Southern	July	726	941,658	.....	963,995	168,691	84,691	40,165	284,204	627,307	65.1	336,688	168,654	148,316	39,903
	7 mos.	726	5,650,574	1,094	5,819,696	1,154,881	596,102	268,919	2,043,712	4,417,522	75.9	1,402,174	692,656	539,569	229,522
Northern Pacific	July	6,889	11,071,900	708,216	12,858,805	2,352,343	2,276,960	242,536	4,604,559	10,112,394	78.6	2,746,411	1,363,804	1,598,713	1,275,278
	7 mos.	6,906	71,572,518	3,989,742	82,542,956	14,920,532	16,571,187	1,752,221	31,293,209	68,816,268	83.4	13,726,688	8,171,497	7,783,868	8,788,983
Northwestern Pacific	July	331	767,953	12,709	814,561	169,924	91,340	5,002	342,555	620,054	76.1	194,507	38,699	112,239	92,942
	7 mos.	331	4,516,959	63,277	4,744,749	1,102,667	571,713	30,275	2,166,988	3,972,470	83.7	772,279	243,918	235,867	365,798
Oklahoma City-Ada-Atoka	July	132	106,809	.....	108,435	25,066	4,889	1,141	26,295	60,736	56.0	47,699	20,234	18,390	—1,629
	7 mos.	132	590,847	2	602,813	145,643	29,790	8,850	158,822	363,812	60.4	239,001	92,502	71,020	40,563
Pennsylvania	July	10,108	63,904,243	14,495,092	86,131,799	10,485,540	17,078,407	1,313,389	37,522,844	69,473,925	80.7	16,657,874	8,542,810	7,128,407	4,389,238
	7 mos.	10,108	423,950,912	90,522,936	563,553,308	66,744,460	123,212,564	8,674,405	262,413,133	482,907,007	85.7	80,646,301	47,635,512	25,225,478	16,192,839
Long Island	July	376	1,209,959	3,661,091	5,083,867	699,379	839,940	19,677	2,323,587	3,967,004	78.0	1,116,863	464,575	374,128	875,067
	7 mos.	376	8,811,143	18,867,116	29,219,114	4,767,463	5,342,373	158,743	15,996,951	26,913,466	92.1	2,305,648	3,170,713	—3,082,272	—1,520,024

Table continued on next left-hand page.

"Use RACOR Special Trackwork and Track Specialties where Stress and Wear are Greatest"

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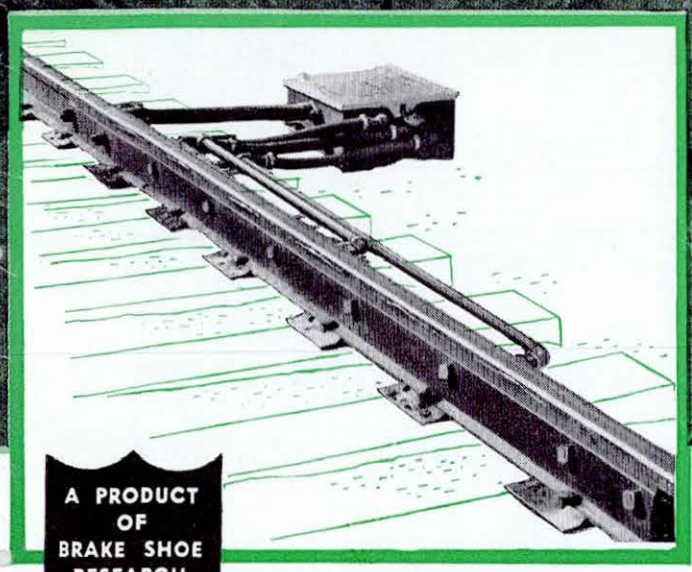

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REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1948

Name of road		Av. mileage operated during period	Operating revenues			Operating Expenses					Operating ratio	Net from railway operation	Railway Tax accruals	Net railway operating income	
						Maintenance of									
			Freight	Passenger	Total (inc. misc.)	Way and Street	Equipment	Traffic	Transportation	Total				1948	1947
Pennsylvania-Reading Seashore Lines	July	388	593,527	879,682	1,511,763	212,608	124,816	12,669	767,100	1,145,569	75.8	366,194	96,764	89,011	237,363
	7 mos.	389	3,911,477	2,352,217	6,530,478	1,457,389	849,750	72,806	4,264,213	6,851,718	104.9	—321,240	675,267	—1,937,321	—1,407,204
Pittsburg & Shawmut	July	97	299,070	.....	299,951	76,512	39,842	2,696	79,439	207,738	69.3	92,213	43,012	19,718	29,440
	7 mos.	97	1,834,074	.....	1,840,301	322,011	281,148	23,136	501,958	1,189,298	64.6	651,003	238,606	318,444	383,616
Pittsburgh & West Virginia	July	135	739,702	.....	775,928	110,206	121,745	37,984	177,073	479,408	61.8	296,520	130,648	177,716	107,216
	7 mos.	135	4,713,174	5	4,903,093	672,148	866,769	271,225	1,191,611	3,232,796	65.9	1,670,297	757,622	1,104,260	677,820
Reading	July	1,338	9,444,343	711,701	10,682,323	1,831,461	2,017,842	130,146	3,966,098	8,271,755	77.4	2,410,568	1,130,209	1,201,096	850,076
	7 mos.	1,347	65,044,689	4,634,870	73,377,292	11,829,894	13,915,415	895,707	29,172,445	57,918,650	78.9	15,458,642	7,399,501	7,666,541	7,194,812
Richmond, Fredericksburg & Potomac	July	118	1,342,071	781,840	2,307,700	368,109	314,612	21,556	788,720	1,598,890	69.3	708,810	326,087	317,603	216,962
	7 mos.	118	9,896,293	4,190,126	15,884,425	1,937,619	2,222,683	132,576	6,322,636	11,537,186	72.6	4,347,239	1,906,266	1,755,569	1,699,384
Rutland	July	407	471,688	41,680	593,027	83,708	110,980	13,909	273,980	499,670	84.3	93,357	Cr. 4,859	82,334	—31,926
	7 mos.	407	2,812,703	243,881	3,603,252	489,113	661,142	93,615	1,909,111	3,278,952	91.0	324,300	207,326	—7,659	—505,159
Sacramento Northern	July	269	148,118	.....	157,919	84,586	20,629	2,460	70,168	184,523	116.8	—26,604	13,925	—49,723	—23,608
	7 mos.	269	1,086,132	5	1,136,796	607,186	150,594	16,715	480,533	1,306,692	114.9	—169,896	89,957	—344,909	—326,239
St. Louis-San Francisco	July	4,645	8,236,402	649,446	9,566,203	1,476,872	1,518,342	242,295	3,785,775	7,447,151	77.8	2,119,052	1,088,284	1,134,093	807,484
	7 mos.	4,645	54,843,398	4,303,843	64,008,665	9,774,069	10,478,175	1,703,712	27,934,925	52,751,009	82.4	11,257,656	6,084,078	5,692,905	5,362,307
St. Louis, San Francisco & Texas	July	159	445,582	13,198	480,827	58,301	33,321	15,963	180,635	298,212	62.0	182,615	63,966	91,724	63,940
	7 mos.	159	2,575,986	97,005	2,812,070	344,037	254,174	112,622	1,257,961	2,040,624	72.6	771,446	262,206	307,258	178,012
St. Louis Southwestern Lines	July	1,575	4,905,584	92,238	5,162,706	620,939	676,251	135,654	1,676,307	3,283,983	63.6	1,878,723	785,459	884,374	782,042
	7 mos.	1,575	34,660,084	447,030	36,252,361	3,761,048	4,349,432	934,908	12,019,799	22,252,917	61.4	13,999,444	5,620,921	6,757,408	6,162,193
Seaboard Air Line	July	4,152	8,151,725	1,248,030	10,053,846	1,525,442	1,945,675	300,810	3,831,336	8,063,540	80.2	1,990,306	964,685	921,318	446,784
	7 mos.	4,152	64,326,756	9,928,897	79,739,755	12,137,671	13,597,263	2,119,837	30,460,120	61,958,964	77.7	17,780,791	7,460,085	8,430,786	5,967,083
Southern	July	6,483	17,526,281	2,034,264	20,791,327	2,784,690	3,644,594	351,211	7,808,495	15,387,844	74.0	5,403,483	2,548,364	2,653,186	1,044,319
	7 mos.	6,483	119,735,839	11,970,722	141,178,954	19,180,419	25,059,542	2,472,133	54,405,323	106,496,476	75.4	34,682,478	15,794,231	16,381,350	11,916,910
Alabama Great Southern	July	316	1,403,838	161,979	1,650,237	203,972	304,050	30,289	520,700	1,114,756	67.6	535,481	271,661	332,638	187,853
	7 mos.	316	9,102,455	803,417	10,527,825	1,384,604	2,183,822	207,028	3,560,918	7,687,540	73.0	2,840,285	1,660,582	1,500,252	881,264
Cinn., New Orleans & Texas Pacific	July	337	3,059,713	231,354	3,433,388	405,972	652,892	58,559	993,116	2,198,684	64.0	1,234,704	603,943	751,350	531,320
	7 mos.	337	20,743,241	1,446,653	23,253,408	2,755,822	4,312,259	397,056	6,920,738	15,078,975	64.8	8,174,433	4,129,498	4,828,521	3,481,256
Georgia Southern & Florida	July	397	474,785	63,617	585,112	107,837	78,737	8,045	223,603	433,501	74.1	151,611	43,056	41,166	719
	7 mos.	397	3,382,536	532,905	4,288,503	877,313	517,534	55,207	1,583,545	3,156,148	73.6	1,132,355	326,458	323,258	281,415
New Orleans & Northeastern	July	204	958,740	99,974	1,109,404	121,734	112,173	17,831	269,290	560,203	50.5	549,201	243,310	257,296	166,708
	7 mos.	204	6,426,134	456,951	7,255,280	1,020,880	756,032	127,053	1,795,561	3,948,276	54.4	3,307,004	1,429,979	1,504,073	1,036,317
Southern Pacific	July	8,179	34,562,338	4,901,144	42,441,046	4,365,797	7,195,819	722,041	17,157,262	31,540,579	74.3	10,900,467	4,628,793	4,399,131	3,079,488
	7 mos.	8,190	214,161,015	27,850,843	260,266,984	30,088,091	48,495,396	4,811,728	106,789,367	204,157,000	78.4	56,109,984	26,024,682	21,706,949	18,171,464
Texas & New Orleans	July	4,316	8,896,378	964,841	10,424,892	1,445,632	1,456,490	198,467	4,390,740	7,952,958	76.3	2,471,934	1,009,923	902,719	1,142,971
	7 mos.	4,316	63,239,597	5,788,091	73,726,396	9,572,454	10,269,671	1,406,050	29,479,060	53,961,962	73.2	19,764,434	7,793,576	8,227,679	8,462,397
Spokane, Portland & Seattle	July	945	1,874,469	121,011	2,131,325	411,428	217,136	18,272	801,007	1,541,101	72.3	590,224	149,389	299,857	—130,825
	7 mos.	945	12,526,155	657,206	14,078,311	3,246,967	1,618,069	132,698	5,160,913	10,776,848	76.5	3,301,463	1,071,167	1,259,097	773,691
Tennessee Central	July	286	331,003	21,160	372,776	62,704	64,957	9,191	176,749	330,659	88.7	42,117	9,971	5,920	—59,815
	7 mos.	286	2,524,198	63,044	2,737,722	431,979	474,469	61,100	1,252,369	2,336,457	85.3	401,265	169,392	—811	—92,346
Texas & Pacific	July	1,854	5,890,881	579,312	6,959,779	887,320	1,017,302	155,826	2,681,032	5,032,982	72.3	1,926,797	727,250	834,827	648,802
	7 mos.	1,854	38,435,111	3,443,997	45,062,315	5,735,454	6,791,300	1,119,678	18,087,549	33,742,540	74.9	11,319,775	4,230,101	4,714,981	4,269,190
Texas Mexican	July	162	387,543	.....	420,724	50,774	30,598	6,135	76,611	178,568	42.4	242,156	110,170	107,748	102,454
	7 mos.	162	1,670,194	66	1,885,802	271,669	181,787	40,049	464,754	1,106,387	58.7	779,415	346,477	308,297	380,703
Toledo, Peoria & Western	July	239	380,351	3	388,046	88,049	29,313	35,125	96,485	291,094	75.0	96,952	48,666	25,185	—75,817
	7 mos.	239	2,456,209	—21	2,500,491	397,506	166,729	231,303	671,768	1,699,802	68.0	800,689	307,944	346,421	—340,979
Union Pacific System	July	9,751	31,828,384	4,341,706	39,266,714	4,970,886	5,707,650	751,892	12,737,266	26,317,397	67.0	12,949,317	6,092,024	5,418,636	2,332,951
	7 mos.	9,753	193,731,557	24,815,688	238,242,585	35,935,685	39,768,946	5,586,806	85,494,332	180,960,417	76.0	57,282,168	32,249,730	18,261,482	17,933,462
Utah	July	111	122,864	.....	124,209	30,070	46,899	641	51,886	137,458	110.7	—13,249	12,653	—16,870	—19,745
	7 mos.	111	1,002,997	.....	1,005,237	227,324	322,273	4,507	408,224	1,018,200	101.3	—12,963	87,294	—40,414	50,426
Virginian	July	661	3,119,630	7,137	3,204,470	399,223	642,647	37,988	793,869	1,956,225	61.0	1,248,245	619,700	811,297	331,256
	7 mos.	661	20,334,967	36,700	20,996,305	2,623,353	4,808,387	269,947	5,541,875	13,867,837	66.0	7,128,468	3,729,860	4,635,309	5,120,857
Wabash	July	2,393	8,361,304	537,721	9,479,680	1,408,484	1,213,302	250,050	3,529,115	6,754,726	71.3	2,724,954	1,046,061	1,228,064	530,488
	7 mos.	2,393	53,617,065	3,185,756	60,850,369	8,357,466	8,158,612	1,751,162	23,783,259	44,311,554	72.8	16,538,815	6,423,339	7,154,643	5,809,960
Ann Arbor	July	294	724,892	6,455	780,611	101,567	143,457	22,302	285,696	571,891	73.3	208,720	85,315	100,705	22,215
	7 mos.	294	4,887,975	24,634	5,055,997	589,305	1,036,626	155,043	2,092,360	3,982,255	78.8	1,073,742	471,613	487,978	314,770
Western Maryland	July	837	3,484,047	20,975	3,624,239	540,499	735,257	67,065	1,138,804	2,602,414	71.8	1,021,825	385,000	770,450	400,824
	7 mos.	837	24,189,037	92,243	25,071,947	3,196,913	4,901,809	461,765	8,288,650	17,705,201	70.6	7,366,746	3,376,000	4,791,748	4,314,181
Western Pacific	July	1,195	3,565,776	225,332	3,919,395	522,772	619,198	150,588	1,308,214	2,872,220	73.3	1,047,175	471,686	539,960	381,838
	7 mos.	1,195	21,946,786	1,096,744	23,721,573	3,511,473	4,182,847	918,753	8,773 232	18,747,990	79.0	4,973,583	1,948,317	2,617,395	1,415,365
Wheeling & Lake Erie	July	505	3,128,082	2	3,306,971	457,436	468,126	60,701	983,396	2,040,907	61.7	1,266,064	564,258	856,140	467,665
	7 mos.	505	19,614,069	16	20,536,021	2,724,008	3,014,953	428,175	6,231,071	12,908,845	62.9	7,627,176	4,059,288	4,933,115	3,780,002
Wisconsin Central	July	1,051	2,398,842	82,877	2,651,369	395,211	313,310	55,565	958,466	1,808,262	68.2	843,107	357,189	360,610	241,840
	7 mos.	1,051	15,737,513	313,820	17,153,735	2,173,797	2,494,886	395,246	6,881,874	12,513,388	72.9	4,640,347	1,543,158	2,190,940	2,213,075

Current Publications

BOOK

Some Basic Techniques in Materials Handling. Proceedings of the Technical Sessions held concurrently with the Second Annual Materials Handling Exposition, Cleveland, Ohio, January, 1948. Paper covered. 84 pages. Published by Clapp & Poliak, Inc., New York. $1.00.

In this book are the 19 addresses made by various speakers during the technical sessions at the Second Materials Handling Exposition, Cleveland, Ohio, January, 1948. Included in these are two by railroad men, J. L. Webb of the Pennsylvania and C. R. Opsahl of the Northern Pacific. (The speeches of Mr. Webb and Mr. Opsahl appeared in the Feb. 28 and Feb. 14 issues, respectively, of *Railway Age.*)

Although much of the material contained in this book has little direct application to the railroad field, there is also much that will be of value to the railroader, especially one in the stations or stores department. Chapters on making a material handling survey, time and motion studies, packaging for mechanical handling and storeroom operations should have more than a little interest for the railroad man. "Factors in material handling investment decisions" should also prove worthwhile reading for many, particularly anyone who is the head of a department using not only industrial trucks but conveyer systems as well. Anyone reading it probably will come up with a few new ideas which he will want to try.

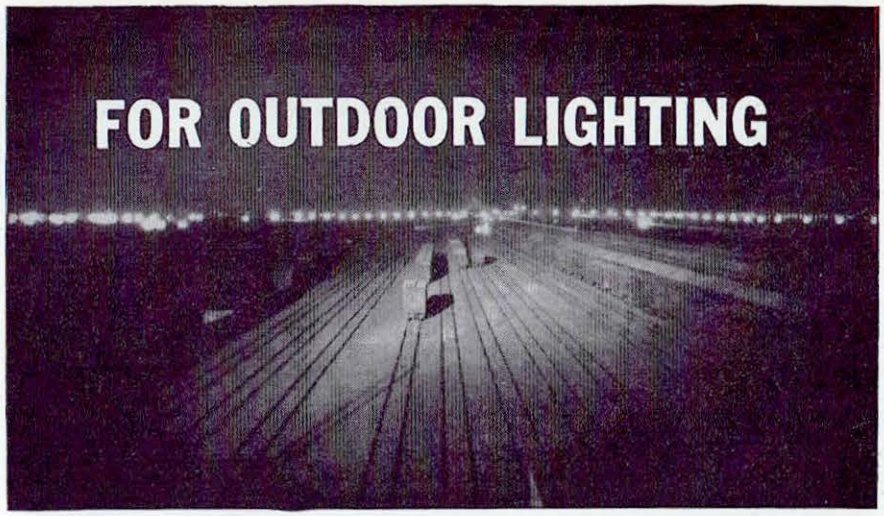
PAMPHLETS

Business Management Action Against Depression, prepared by the Committee on Economic Policy, Chamber of Commerce of the U. S. A. 16 pages. Published by the Economic Research Department, Chamber of Commerce of the U. S. A., Washington 6, D. C. Single copies, 20 cents.

A guide against depression designed to be used by business men as a permanent check sheet. It discusses business fluctuations, and after propounding a number of basic and current questions, continues with a table for the use of the reader in making non-statistical estimates of the business outlook. This table is to be re-checked from time to time to revise the estimates and for comparison with actual performance; also included are two pages of basic economic indicators and two pages of "do's" and "don'ts" to aid in strengthening our economy.

Southern Pacific Transportation Company. 2 pages. Issued by Mackubin, Legg & Company, Baltimore 3, Md.

A two-page report supplementing one noted in *Railway Age* of August 14, page 103. Presents earning and traffic figures through June and discusses the Southern Pacific investment in the St. Louis Southwestern, territory served by the Southern Pacific, and the outlook for its stock as an investment.



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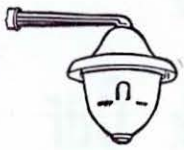

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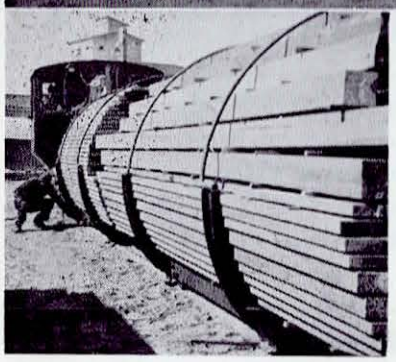

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General News

(Continued from page 78)

H. H. Antrim Appointed Head of A. A. R. Committee

H. H. Antrim, auditor of revenues for the Delaware, Lackawanna & Western, has been appointed chairman of the committee on freight accounts of the railroads of the United States, Canada and Mexico. The appointment was announced by the Association of American Railroads.

F.T.C. Orders Ticket Manufacturers To Cease Price-Fixing Practices

The Federal Trade Commission has ordered 33 manufacturers and six trade associations to cease and desist from unlawfully combining to fix prices and eliminate competition in manufacture and sale of tickets and related products, including those used by railroads, city and interurban railways, bus companies and airlines. The F. T. C.'s complaint was reported in *Railway Age* of April 17, page 55.

The F. T. C. said the manufacturers agreed upon "identical and uniform prices, discounts, surcharges and extra charges" to be used in sale of tickets. At the same time, it found that the manufacturers adopted an "open price filing plan" and formulated a "code of symbols" thereby enabling respondents to detect deviations from announced prices.

The F. T. C. also found that the manufacturers periodically prepared and adopted "guides of fair value" which were used to designate specific charges to be made for each item of variation where the size, printed matter or other characteristics of "tailor-made" or "special made" tickets deviated from that of the standard tickets. This plan enabled the respondents to charge "identical and uniform prices" for "special made" tickets, the commission said.

Other findings of the commission showed that the manufacturers standardized products as to size, style and color and as to weight and quality of paper and cardboard used in manufacturing them and held meetings of the membership of the various associations, and of committees acting for the associations and for their members, where "prices were discussed and fixed and action taken to eliminate competition."

The F. T. C. said the six associations, including the Transit Ticket Manufacturers Association and the Licensed Railroad Ticket Manufacturers Association, both of 369 Lexington avenue, New York, were organized by the manufacturers and acted as "clearing houses or central agencies" to effectuate the conspiracy.

The commission's cease and desist order also includes the co-partnership of Gooch & Co., of the same New York address, which acted as secretary and industry counsel for each association.

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Gooch & Co., it said, was employed by the associations to "make plans and to aid, assist and direct" the manufacturers in effectuating the conspiracy. It added that Gooch & Co. received reports from manufacturers of all sales below agreed prices and that Joseph Gooch, Jr., a member of the firm, was empowered to "arbitrate and adjust" all disputes growing out of such sales.

Says Justice Department Policy Could Cripple Transportation

The ability of American railroads to meet transportation demands should there be another war "is seriously threatened by policies of the Department of Justice," Edwin C. Matthias, vice-president and general counsel of the Great Northern, declared in an address at Seattle, Wash., on September 6. Addressing the public utilities section of the American Bar Association at its annual convention, Mr. Matthias said of the government's pending reparation suits against the carriers: "The attack upon the railroads, viewed in the light of the recent disclosures of communistic activities in government departments, obviously poses the question whether a sinister effort is being made to cripple our transportation system."

The reparation suits, said the speaker, are designed "either to reduce the American railroads to physical and financial impotency or instigated with reckless disregard of the possible effect upon the railroads and the economy of the country." He pointed out that the carriers contributed over seven billion dollars toward the cost of World War II, adding, "What other industry equaled that record?" Rates paid by the government during the war were in "no instances higher, and in nearly every case were substantially lower, than those paid by ordinary commercial or private shippers," he declared.

Faricy, Colonel Johnson to Address Annual Meeting of Shippers Boards

Addresses by William T. Faricy, president of the Association of American Railroads, and Colonel J. Monroe Johnson, director of the Office of Defense Transportation, will highlight the 12th annual meeting of the National Association of Shippers Advisory Boards to be held at the Hotel Jefferson, St. Louis, Mo., on October 5. The association's board of directors will meet on October 4.

Warren C. Kendall, now on leave as chairman of the A.A.R.'s Car Service Division, will be the subject of Mr. Faricy's address, while Colonel Johnson will speak on "Transportation." Both addresses will be delivered at the October 5 luncheon session.

The meeting will be opened with a report by the association's president, Carl Giessow, director, transportation bureau, St. Louis, Mo., Chamber of Commerce, who also will announce the appointment of committees. Other reports to be submitted at the morning

session will include those from the association's national secretary and vice-president, respectively, F. J. Armstrong, traffic manager, United States Radiator Corporation, Detroit, Mich., and F. J. Rebhan, traffic manager, American Crystal Sugar Company, Denver, Colo. Mr. Rebhan's presentation will pertain to the new freight car program and the activities of the car efficiency committees.

Three A.A.R. officers—J. H. Aydelott, vice-president, operations and maintenance; A. H. Gass, chairman, Car Service Division; and J. Carter Fort, vice-president and general counsel—will be the principal speakers at the afternoon session. Mr. Aydelott will discuss carrier-shipper cooperation, while the topics of Mr. Gass and Mr. Fort will be "The National Transportation Situation" and "Transportation Legislation," respectively.

Another feature on the afternoon program will be a claim prevention and perfect shipping forum headed by I. M. Peters, traffic manager, Corn Products Refining Company, Chicago; Lewis Pilcher, executive vice-chairman, freight claim division, A.A.R.; A. L. Green, special representative, freight claim division, A.A.R.; and W. B. Shepherd, also a vice-president of the shippers' association. Mr. Shepherd is assistant general traffic manager of the Aluminum Company of America, Pittsburgh, Pa.

Following the forum, the agenda calls for the election of officers and a discussion of unfinished and new business.

Northern, B. & M. Leased Line, Celebrates 100th Anniversary

A two-day celebration of the 100th anniversary of the opening of the Northern, now operated under lease by the Boston & Maine, was inaugurated on September 8 when the directors of the road, headed by Dudley W. Orr, its president, and escorted by Robert M. Edgar, assistant to the president of the B. & M., traversed the line's 70-mi. route from Concord, N. H., to White River Junction, Vt. On the second day of the celebration in the Eagle Hotel, Concord, Edward S. French, president of the B. & M., Laurence F. Whittemore, president of the New York, New Haven & Hartford, and state and city officials, including the New Hampshire Public Service Commission, joined with the New Hampshire chapter of the Newcomen Society in a formal luncheon as part of the ceremonies.

Fletcher Again Heads "Y" Drive

The annual membership campaign of the railroad Y.M.C.A.'s of the United States and Canada is again underway under the direction of Judge R. V. Fletcher, special counsel, Association of American Railroads, assisted by a committee of labor representatives and railroad officers.

Campaign workers are hoping to beat the all-time record set in their continental membership campaign last year, when they enrolled 131,000 railroaders, a gain of nearly 6,000 over the previous year.

Organized in 1872 by railroad employees hoping to improve their everyday living, railroad Y. M. C. A.'s are now at work at 190 points on 48 of the leading railroads in the United States and Canada. Last year they served almost 14,000,000 meals to railroaders; away-from-home terminal employees "hit the sack" at the Y. M. C. A. 3,000,000 times; scrubbed off soot and grime with more than 2,000,000 baths.

In the same year railroad Y. M. C. A. libraries circulated more than 235,000 volumes. More than 3,000,000 railroaders and their families took part in study courses in such subjects as labor-management relations, Diesel operation, and public speaking, and in other "Y" activities.

No 1948 Meeting For Freight Claim Division

The general committee of the freight claim division of the Association of American Railroads has announced that the annual session for 1948 will not be held. The meeting had originally been called for May 11-13 at Miami, Florida, and had to be deferred because of the threatened strike by railroad operating employees. Following review of the availability of hotels at Miami and other places during the summer and fall of 1948, it was the conclusion of the committee that the interest of the division would be best served by eliminating the 1948 meeting entirely.

Steam Locomotives "Vanishing Race," Says Alco President

More than $1,000,000,000 worth of Diesel-electric locomotives will be built at the American Locomotive Company's Schenectady, N. Y., plant in the next 10 years, Robert B. McColl, Alco president, predicted on September 16. Mr. McColl described steam locomotives as a "vanishing race" and predicted also that by the time today's children are ready to take their places in railroading the steam locomotive may well be extinct.

"The overwhelming trend to Dieselization of the nation's railroads is even greater than we thought it would be at the end of the war," he said. "It will take approximately 20,000 Diesel-electric locomotives in the next 10 years to replace the 35,000 steam units now in operation in the United States." Pointing to the growing world market for Diesel power, Mr. McColl added: "Everywhere our representatives go in foreign countries there is a new and lively interest in the tremendous economies being realized by U. S. railroads by the use of Diesel-electrics. This will be a factor in our plans for the next

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decade. We have already shipped post-war Diesels to Portugal and Brazil and many other countries are investigating this new equipment."

Full Dieselization of all domestic railroads, the Alco officer continued, would result in less fuel oil being used by locomotives than is consumed today. He said that approximately 7,000 of the existing 35,000 steam locomotives are oil burners and, on the average, an oil-burning steam locomotive uses many times more oil than a Diesel-electric. "Dieselization of all Class I railroads will also result in annual savings of more than half a billion dollars from just one item alone: The cost of fuel and its transportation. . .Savings in locomotive operating costs are singularly responsible for the railroad motive power revolution. . .One railroad executive told me recently that his Diesel-electric program represents a saving of $5,000,000 in operating costs this year. This saving exceeds this road's annual fixed charges. An eastern railroad that has Dieselized its main-line passenger routes told us this week that its train-mile costs are down two-thirds as a result. Generally speaking, in Dieselizing a railroad or part of a railroad it can be expected that a saving of 25 per cent on the investment will be made annually. Locomotives assigned to preferred runs often earn their entire cost in two to three years."

Selected Income and Balance-Sheet Items of Class I Steam Railways in the United States

Compiled from 127 reports (Form IBS) representing 131 steam railways
(Switching and Terminal Companies Not Included)

Income Items	United States For month of May 1948	For month of May 1947	For the five months of 1948	For the five months of 1947
1. Net railway operating income	$90,178,066	$76,818,501	$285,928,717	$312,521,975
2. Other income	15,331,899	15,220,240	87,474,744	81,949,882
3. Total income	105,509,965	92,038,741	373,403,461	394,471,857
4. Miscellaneous deductions from income	4,249,721	2,843,883	19,116,727	15,801,721
5. Income available for fixed charges	101,260,244	89,194,858	354,286,734	378,670,136
6. Fixed charges:				
6–01. Rent for leased roads and equipment	9,843,069	10,468,576	51,890,177	52,305,616
6–02. Interest deductions[1]	24,345,206	25,975,122	121,492,861	130,515,775
6–03. Other deductions	147,047	162,274	714,951	711,791
6–04. Total fixed charges	34,335,322	36,605,972	174,097,989	183,533,182
7. Income after fixed charges	66,924,922	52,588,886	180,188,745	195,136,954
8. Other deductions	3,210,407	3,157,772	16,059,073	14,113,352
9. Net income	63,714,515	49,431,114	164,129,672	181,023,602
10. Depreciation (Way and structures and equipment)	31,090,411	29,437,170	152,626,478	145,820,019
11. Amortization of defense projects	1,362,078	1,357,846	7,152,426	6,769,164
12. Federal income taxes	28,136,690	24,862,688	119,680,281	121,460,121
13. Dividend appropriations:				
On common stock	26,700,522	21,454,573	59,044,948	58,963,693
On preferred stock	12,053,517	9,935,467	31,223,999	21,444,740
Ratio of income to fixed charges (Item 5÷6—04)	2.95	2.44	2.03	2.06

Selected Expenditure and Asset Items	United States Balance at end of May 1948	Balance at end of May 1947
17. Expenditures (gross) for additions and betterments—Road	$116,858,650	$93,559,087
18. Expenditures (gross) for additions and betterments—Equipment	342,757,180	187,374,907
19. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	543,014,585	575,577,849
20. Other unadjusted debits	160,874,820	173,331,644
21. Cash	893,029,598	1,035,260,360
22. Temporary cash investments	903,560,729	943,523,581
23. Special deposits	110,982,266	134,467,337
24. Loans and bills receivable	12,610,077	192,024
25. Traffic and car-service balances—Dr.	56,886,789	46,479,985
26. Net balance receivable from agents and conductors	138,457,554	129,112,138
27. Miscellaneous accounts receivable	342,253,441	290,532,045
28. Materials and supplies	811,098,191	728,105,607
29. Interest and dividends receivable	20,851,319	19,509,835
30. Accrued accounts receivable	173,146,795	151,990,132
31. Other current assets	35,340,380	42,606,357
32. Total current assets (items 21 to 31)	3,498,217,139	3,521,779,401
40. Funded debt maturing within 6 months[2]	$126,141,584	$148,776,282
41. Loans and bills payable[3]	3,175,000	4,250,000
42. Traffic and car-service balances—Cr.	93,892,854	89,228,746
43. Audited accounts and wages payable	600,111,890	511,346,570
44. Miscellaneous accounts payable	201,883,049	196,654,007
45. Interest matured unpaid	32,718,650	45,376,809
46. Dividends matured unpaid	7,953,390	8,211,389
47. Unmatured interest accrued	66,980,467	62,039,545
48. Unmatured dividends declared	50,850,169	40,339,235
49. Accrued accounts payable	202,546,206	168,570,470
50. Taxes accrued	651,395,145	481,314,992
51. Other current liabilities	91,840,184	85,940,377
52. Total current liabilities (items 41 to 51)	2,003,347,004	1,693,272,140
53. Analysis of taxes accrued:		
53-01. U. S. Government taxes	513,790,590	353,325,507
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[1] Represents accruals, including the amount in default.
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IN THIS ISSUE

Ajax-Consolidated Company 107
Allen-Billmyre Division, Lamson Corporation 102
Aluminum Company of America 100
American Arch Company, Inc. 85
American Brake Shoe Company, Ramapo Ajax Division 93
American Car and Foundry Company ...20, 21
American Creosoting Company 7
American Steel Foundries 9

Barco Manufacturing Company 22
Bethlehem Steel Company 19
Briggs & Stratton Corporation 97
Budd Company, The 40, 41
Butler Manufacturing Company 18

Carey Co., Inc. Thomas F. 104
Caterpillar Tractor Co. 13
Chapman Chemical Company 10
Cherry Rivet Company 12
Classified Advertisements 104
Climax Molybdenum 99

Dearborn Chemical Company 11
Differential Steel Car Corporation 102

Edgewater Steel Company 39
Edison Storage Battery Division of Thomas A. Edison, Incorporated 15
Electro-Motive Division, General Motors Corporation .....Front Cover
Enterprise Railway Equipment Co. 33

Fairbanks, Morse & Co. 37
Franklin Railway Supply Company 83
Frost Lumber Industries, Inc. 96

Gardner-Denver Company 14
General Steel Castings Corporation 104
Get Together Department 104
Gieskieng, M. W. 104
Graver Tank & Mfg. Co., Inc. 24
Graybar Electric Company, Inc. 95
Great Lakes Steel Corporation 30

Harbison-Walker Refractories Co. 85
Harrison Radiator Division of General Motors Corporation 16
Hooven, Owens, Rentschler Co. 81
Hunt-Spiller Mfg. Corp. 91
Hyatt Bearings Division, General Motors Corporation 44

Inland Steel Company 3
Iron & Steel Products, Inc. 104

Karpen & Bros., S. 29
Kelite Products, Inc. 105
Koppers Company, Inc., Wood Preserving Division 26

Lamson Corporation, Allen-Billmyre Division 102
Lehon Company, The 103
Lima-Hamilton Corporation 81
Lima Locomotive Division, Lima Shovel & Crane Division 81

Master Builders Co., The 23
Met-L-Wood Corporation 43
Moody, L. W. 104

Nathan Manufacturing Company 104
National Pneumatic Company 31
Niles Tool Works Co. 81

Ogle Construction Co. 27
Ohio Locomotive Crane Co., The 102
Okonite Company, The 48

Pittsburgh Plate Glass Company 34
Portland Cement Association 6

Railway Educational Bureau, The 104
Ramapo Ajax Division, American Brake Shoe Company 93
Remington-Rand 102
Rustoleum Corporation 42
Ryerson & Son, Inc., Joseph T 106

Scullin Steel Co. 35
Simmons-Boardman Publishing Corporation 38, 102
Sperry Products Inc. 25
Spring Packing Corporation 32
Standard Car Truck Company 101

T-Z Railway Equipment Co. 17
Timken Roller Bearing Company, The ..... Back Cover

Union Asbestos & Rubber Co 4, 5
Union Switch & Signal Co. 46
Unit Truck Corporation 2
United States Steel Supply Company 105

Vander Horst Corporation of America 36

Westinghouse Air Brake Co. 89
White Manufacturing Company 103
Whiting Corporation 8
Willson Products, Inc. 98
Wood Preserving Division of Koppers Company, Inc 26

Youngstown Sheet and Tube Company, The 28

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To date the distribution of reprints—entirely on requests—has reached about 10,000 copies. The record, compiled by the author, lists the names of 90 engineering and signal officers on 59 different roads, with the number of copies requested by individual roads ranging from five to as many as 1,158. Average number of copies requested per road was 154.

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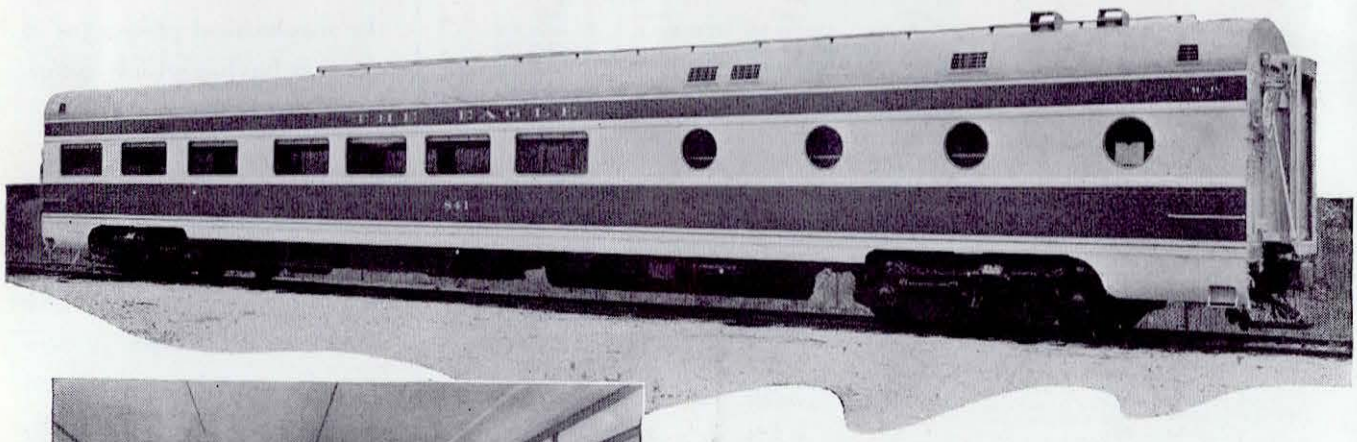

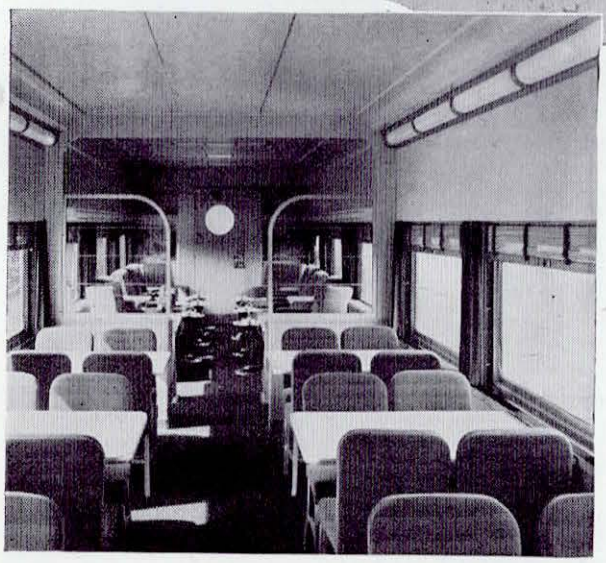

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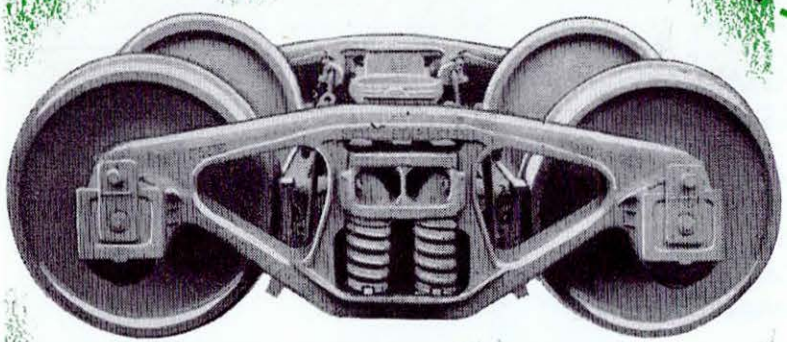

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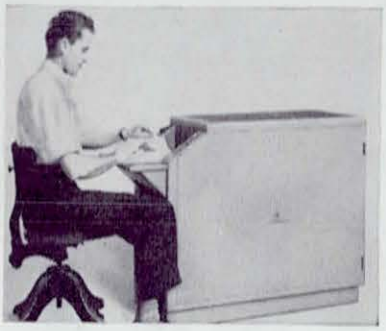

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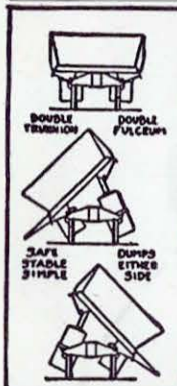

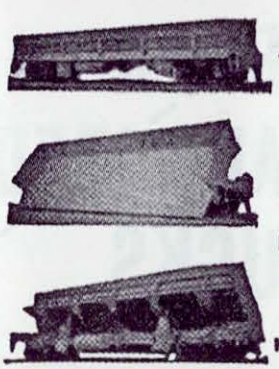

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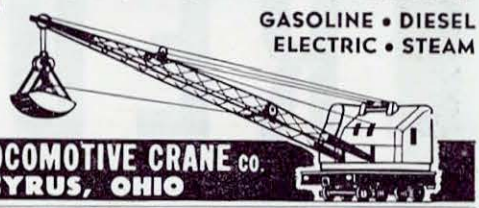

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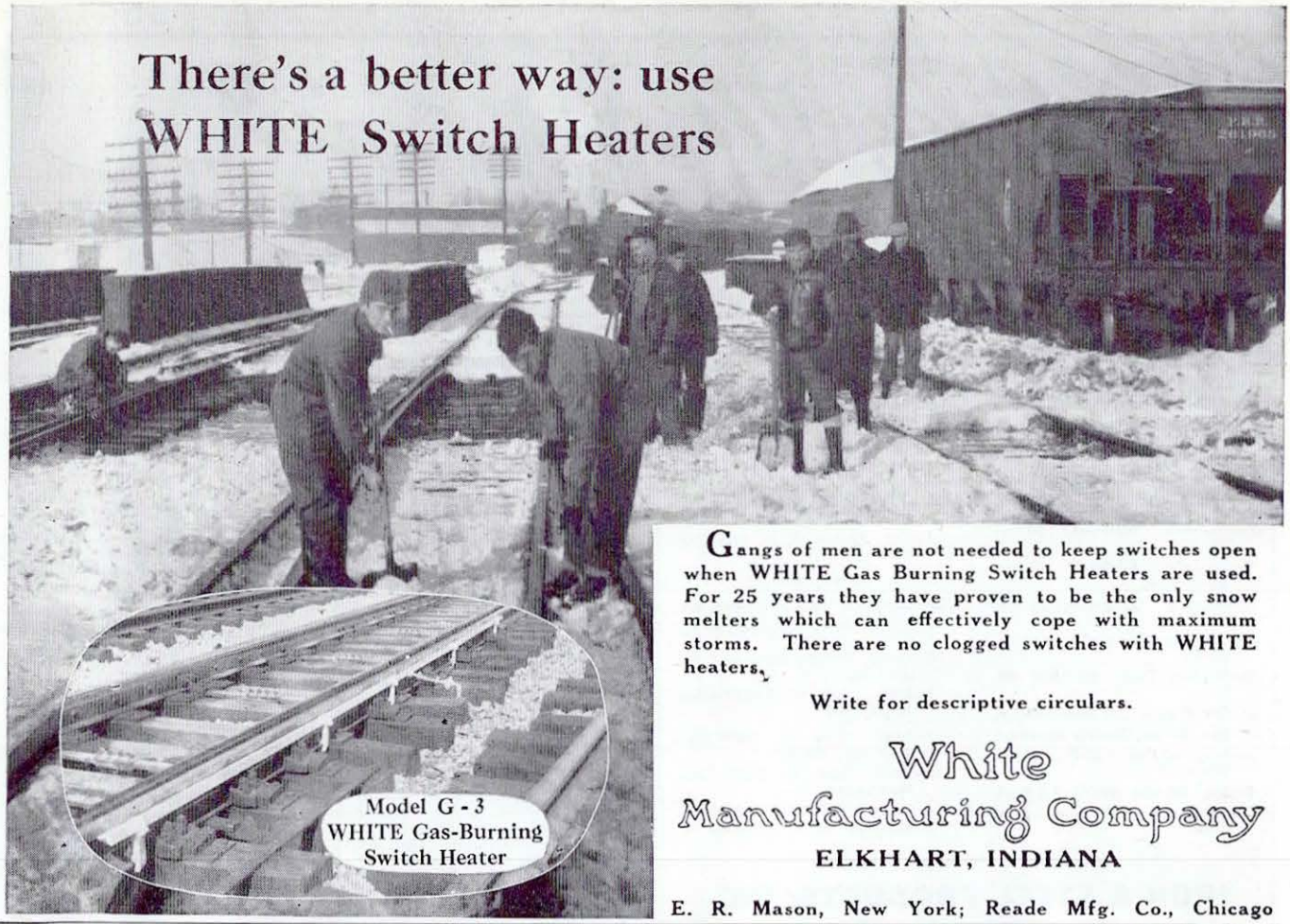

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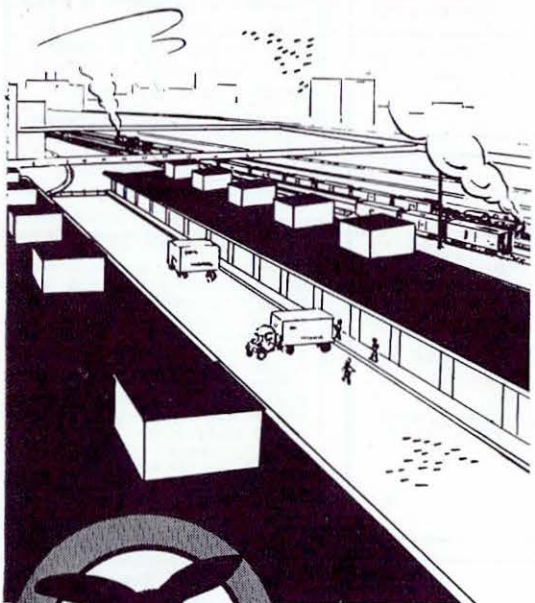

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"THE STEELS THAT DO MORE"

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Advertisers

IN THIS ISSUE

Ajax-Consolidated Company 107
Allen-Billmyre Division, Lamson Corporation 102
Aluminum Company of America 100
American Arch Company, Inc. 85
American Brake Shoe Company, Ramapo Ajax Division 93
American Car and Foundry Company ..20, 21
American Creosoting Company 7
American Steel Foundries 9

Barco Manufacturing Company 22
Bethlehem Steel Company 19
Briggs & Stratton Corporation 97
Budd Company, The 40, 41
Butler Manufacturing Company 18

Carey Co., Inc. Thomas F. 104
Caterpillar Tractor Co. 13
Chapman Chemical Company 10
Cherry Rivet Company 12
Classified Advertisements 104
Climax Molybdenum 99

Dearborn Chemical Company 11
Differential Steel Car Corporation 102

Edgewater Steel Company 39
Edison Storage Battery Division of Thomas A. Edison, Incorporated 15
Electro-Motive Division, General Motors Corporation .....Front Cover
Enterprise Railway Equipment Co. 33

Fairbanks, Morse & Co. 37
Franklin Railway Supply Company 83
Frost Lumber Industries, Inc. 96

Gardner-Denver Company 14
General Steel Castings Corporation 104
Get Together Department 104
Gieskieng, M. W. 104
Graver Tank & Mfg. Co., Inc. 24
Graybar Electric Company, Inc. 95
Great Lakes Steel Corporation 30

Harbison-Walker Refractories Co. 85
Harrison Radiator Division of General Motors Corporation 16
Hooven, Owens, Rentschler Co. 81
Hunt-Spiller Mfg. Corp. 91
Hyatt Bearings Division, General Motors Corporation 44

Inland Steel Company 3
Iron & Steel Products, Inc. 104

Karpen & Bros., S. 29
Kelite Products, Inc. 105
Koppers Company, Inc., Wood Preserving Division 26

Lamson Corporation, Allen-Billmyre Division 102
Lehon Company, The 103
Lima-Hamilton Corporation 81
Lima Locomotive Division, Lima Shovel & Crane Division 81

Master Builders Co., The 23
Met-L-Wood Corporation 43
Moody, L. W. 104

Nathan Manufacturing Company 104
National Pneumatic Company 31
Niles Tool Works Co. 81

Ogle Construction Co. 27
Ohio Locomotive Crane Co., The 102
Okonite Company, The 48

Pittsburgh Plate Glass Company 34
Portland Cement Association 6

Railway Educational Bureau, The 104
Ramapo Ajax Division, American Brake Shoe Company 93
Remington-Rand 102
Rustoleum Corporation 42
Ryerson & Son, Inc., Joseph T 106

Scullin Steel Co. 35
Simmons-Boardman Publishing Corporation 38, 102
Sperry Products Inc. 25
Spring Packing Corporation 32
Standard Car Truck Company 101

T-Z Railway Equipment Co. 17
Timken Roller Bearing Company, The ..... Back Cover

Union Asbestos & Rubber Co 4, 5
Union Switch & Signal Co. 46
Unit Truck Corporation 2
United States Steel Supply Company 105

Vander Horst Corporation of America 36

Westinghouse Air Brake Co. 89
White Manufacturing Company 103
Whiting Corporation 8
Willson Products, Inc. 98
Wood Preserving Division of Koppers Company, Inc 26

Youngstown Sheet and Tube Company, The 28

10,000 Reprints Requested by 59 Railroads!

Every week, letters pour in from railroads and supply companies asking for reprints of articles which have appeared in *Railway Age* and its sister publications.

An outstanding instance happened early this year—when requests for reprints quickly mounted to 5,000 copies. But that was only the beginning!

A record was kept of requests for reprints of this article entitled, "Insulated Rail Joints—Their Installation and Maintenance" written by E. P. Schermerhorn, Manager, of the Insulated Joint Department of The Rail Joint Company, and appearing in the December, 1947, issue of Railway Engineering and Maintenance and the January 1948 issue of Railway Signaling.

To date the distribution of reprints—entirely on requests—has reached about 10,000 copies. The record, compiled by the author, lists the names of 90 engineering and signal officers on 59 different roads, with the number of copies requested by individual roads ranging from five to as many as 1,158. Average number of copies requested per road was 154.

Mr. Schermerhorn, in writing to our editor said, "I think it is significant as showing the real desire of these men for information and knowledge—and also showing the value to them of your publications."

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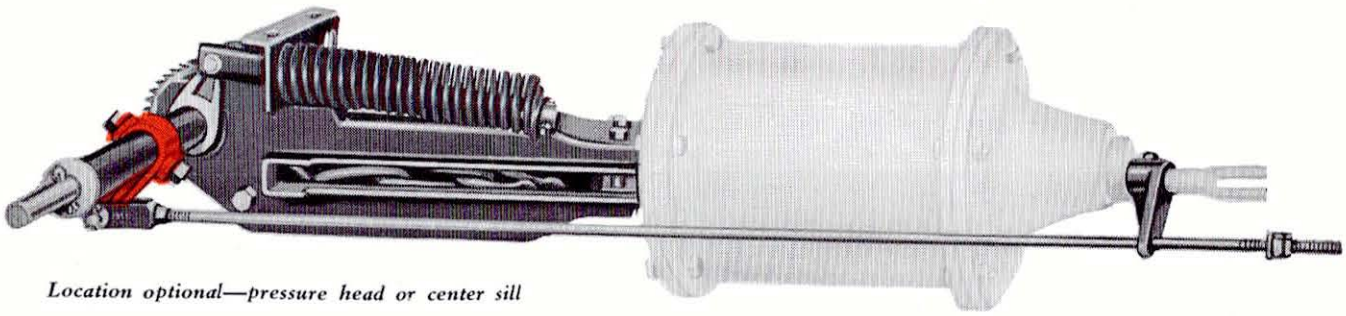

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- Easy to install
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AUTOMATIC Maintenance of Proper Brake Shoe Adjustment on All Cars is Necessary for Effective Operation and Minimum Maintenance Cost.

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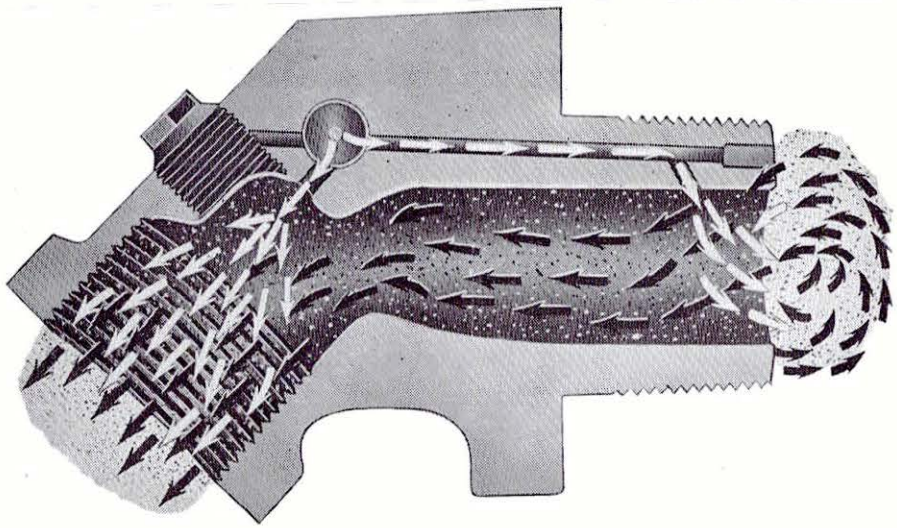

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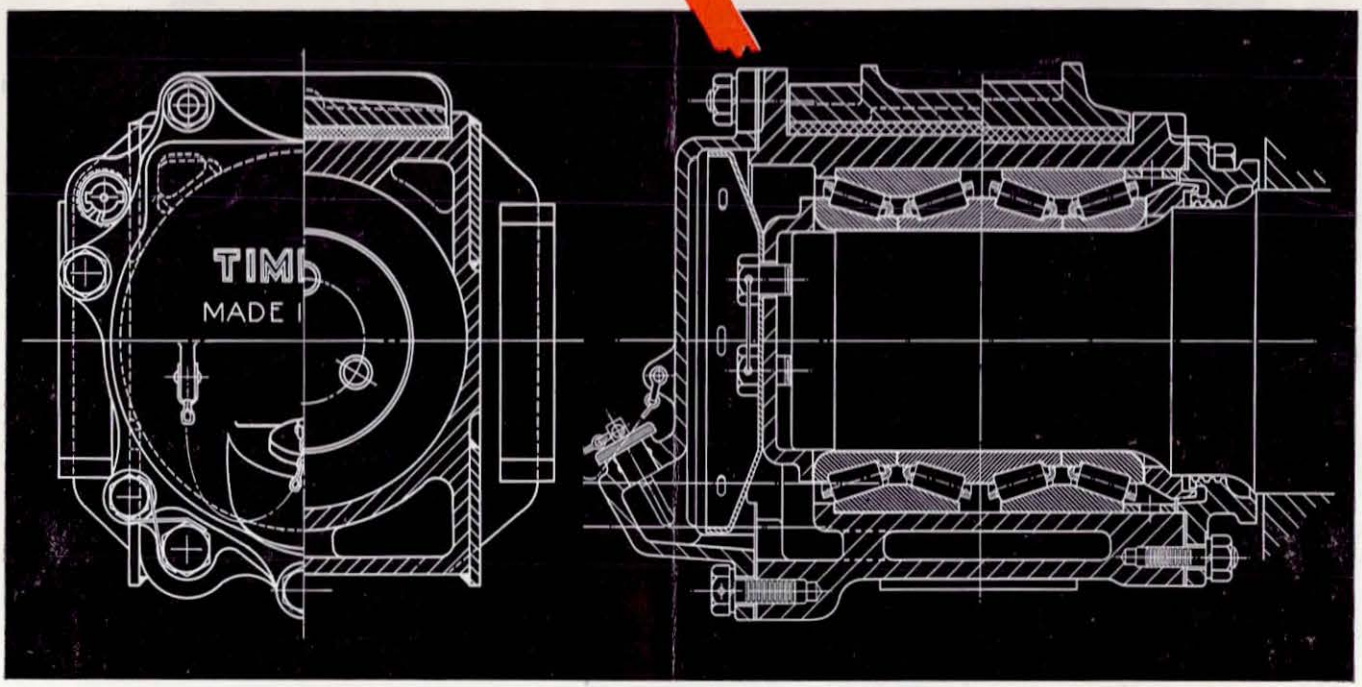

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